



**CERTIFICATION APPLICATION REPORT FOR
FOUR 10.5MW SIMPLE CYCLE TURBINES AT
DREWS SUBSTATION**

PREPARED FOR:

Alliance Power, Inc.
13934 Eberle Road
Bakersfield, California 93313

FOR SUBMITTAL TO:

California Energy Commission
1516 Ninth Street
Sacramento, California 95814

PREPARED BY:

SCEC

Air Quality Specialists
1582-1 N. Batavia Street
Orange, California 92867
(714) 282-8240

March, 2001

ATTACHMENTS

ATTACHMENT A

EMERGENCY SITING APPLICATION PROCESS APPLICATION CHECKLIST

ATTACHMENT A
CALIFORNIA ENERGY COMMISSION
EMERGENCY SITING PROCESS APPLICATION CHECK LIST

REQUIREMENT	YES/NO	PAGE IN APPLICATION
1 Project Description		
1.1 Project owner/operator (Name, title, address, phone)	Y	1
1.2 Overview of power plant and linear facilities	Y	1
1.3 Structure demensions (size and height), plan and profile	Y	2
1.4 Full size color photo of the site and rendering of proposed facility if available	Y	2
1.5 Maximum foundation depth, cut and fill quantities	Y	2
1.6 Conformance with California Building Code	Y	2
1.7 Proposed operation (hours per year)	Y	2
1.8 Expected on-line date	Y	3
1.9 Proposed duration of operation (years)	Y	3
1.10 Identify transmission interconnection facilities	Y	3
1.11 Transmission interconnection application	Y	3
1.12 "Down-stream" transmission facilities, if known	Y	3
1.13 Fuel interconnection facilities	Y	3
1.14 Fuel interconnection application	Y	4
1.15 Water requirements and treatment	Y	4
1.16 Water interconnection facilities (supply/discharge)	Y	4
1.17 Source and quality of water supply	Y	4
1.18 Water supply agreement/proof of water supply	Y	4
2 Site Description		
2.1 Site address (street, city, county)	Y	5
2.2 Assessor's parcel number	Y	5
2.3 Names and addresses of all property owners within 500 feet of the project site or related facilities in both hard copy and electronic mail merge format.	Y	5
2.4 Existing site use	Y	5
2.5 Existing site characteristics (paved, graded, etc.)	Y	5
2.6 Layout of site (include plot plan)	Y	5
2.7 Zoning and general plan designations of site and linear facilities	Y	5
2.8 Ownership of site (Name, address, phone)	Y	6
2.9 Status of site control	Y	6
2.9 Equipment laydown area – size and location	Y	6
3 Construction Description		
3.1 Construction schedule	Y	7
3.2 Workforce requirements (peak, average)	Y	7
4 Power Purchase Contract (DWR, ISO, other)		
4.1 Status of negotiations and expected signing date	Y	8
5 Air Emissions		
5.1 Nearest monitoring station (location, distance)	Y	9
5.2 Provide complete self certification air permit checklist	Y	9
5.3 Provide complete air permit application	Y	9
5.4 Status of air permit application with air district	Y	10
5.5 Status of offsets and/or mitigation fees, as required	Y	10
6 Noise		
6.1 Local noise requirements	Y	11
6.2 Nearest sensitive receptor (type, distance)	Y	11
6.3 Project noise level at nearest property line	Y	11
6.4 Proposed mitigation if required	Y	11
7 Hazardous Materials		
7.1 Type and volume of hazardous materials on-site	Y	12

REQUIREMENT	YES/NO	PAGE IN APPLICATION
7.2 Storage facilities and containment	Y	12
8 Biological resources		
8.1 Legally protected species* and their habitat on site, adjacent to site and along right of way for linear facilities (*	Y	13
8.2 Designated critical habitat on site or adjacent to site (wetlands, vernal pools, riparian habitat, preserves)	Y	13
8.4 Proposed mitigation as required	Y	13
9 Land Use		
9.1 Local land use restrictions (height, use, etc.)	Y	14
9.2 Use of adjacent parcels (include map)	Y	14
9.3 Ownership of adjacent parcels – site and linears	Y	14
9.4 Demographics of census tract where project is located (most current available)	Y	14
10 Public Services		
10.1 Ability to serve letter from Fire District	Y	15
10.2 Nearest fire station	Y	15
11 Traffic and Transportation		
11.1 Level of Service (LOS) measurements on surrounding roads – a.m. and p.m. peaks	Y	16
11.2 Traffic Control Plan for roads during construction	Y	16
11.3 Traffic impact of linear facility construction	Y	16
11.4 Equipment transport route	Y	16
11.5 Parking requirements – workforce and equipment	Y	17
12 Soils and Water Resources		
12.1 Wastewater volume, quality, treatment	Y	18
12.2 Status of permits for wastewater discharge or draft permit (WDR/NPDES)	N/A	
12.3 Draft Erosion Prevention and Sedimentation Control Plan or Mitigation Strategy	Y	18
12.4 Spill Prevention/Water Quality Protection Plans	Y	18
13 Cultural Resources		
13.1 Identification of known historic/prehistoric sites	Y	19
13.2 Proposed mitigation if required	Y	19
13.3 Notification of Native Americans	Y	19
14 Paleontological Resources		
14.1 Identification of known paleontologic sites	Y	20
14.2 Proposed mitigation if required	Y	20
15 Visual resources		
15.1 Plan for landscaping and screening to meet local requirements	Y	21
15.2 Full size color photo of the site and rendering of proposed facility with any proposed visual mitigation if available	N	
16 Transmission System Engineering		
16.1 Conformance with Title 8, High Voltage Electrical Safety Orders, CPUC General Order 95 (or NESC), CPUC Rule 21, PTO Interconnection Requirements, and National Electric Code	Y	22

ATTACHMENT B

**AIR QUALITY SELF CERTIFICATION CHECKLIST
FOR SIMPLE CYCLE GAS TURBINE GENERATION UNITS**

ATTACHMENT B**California Energy Commission****Air Quality Self-Certification Checklist for Simple-Cycle Gas Turbine Generation Units**

License Application for:

☒ New Emissions Unit(s) at a New Stationary Source☐ New Emissions Unit(s) at an Existing Stationary Source

DISTRICT:

South Coast Air Quality Management District

DATE:

March 8, 2001

FACILITY INFORMATION

License to be Issued to:

Alliance Colton LLC

Mailing Address:

7950 S. Lincoln St. Suite 114

City:

Littleton

State:

Colorado

Zip Code:

80122

Address Where Equipment Will be Operated:

559 South Pepper Avenue

City:

Colton

State:

California

Zip Code:

Nature of Business:

Power Generation

SIC Code:

4911

Facility Contact Person:

Brian O'Neill

Phone Number:

1-661-836-9873

Fax Number:

1-661-836-9853

Email:

Application Information Contact Person (if different from above):

Karl Lany

Phone Number:

1-714-282-8240

Fax Number:

1-714-282-8247

Email:

Will the facility be under contract to sell its power within California? ☒ Yes ☐ No

If Yes, state the entity contracted with and the percentage of power that will be sold:

California Department of Water Resources – 100%

What is the maximum total electrical output of the new power generation equipment at International Standards Organization (ISO) conditions? 42

MW

Estimated construction start date: 4 / 1 / 01Estimated completion date: 7 / 15 / 01Length of commissioning period (from date of initial startup): two to three weeks (20 operating hours)

NEW EQUIPMENT INFORMATION

TURBINE #1	If multiple identical units, indicate number of units of this type: <u>4</u>		
		10.5 MW	MW
	Manufacturer: General Electric		
	Model: 10B1		
	Maximum Heat Input (based on LHV of fuel): 116.3; 129 (based on HHV of fuel) MMBtu/hr Reference to lower heating value (LHV) in this application are based upon 948 Btu/cf. References to higher heating value (HHV) are based upon 1050 Btu/cf.		
TURBINE #2	If multiple identical units, indicate number of units of this type: _____		
		MW	MW
	Manufacturer:		
	Model:		
	Maximum Heat Input (based on HHV of fuel): MMBtu/hr		

Suggested Best Available Control Technology (BACT)	Emission Level	Control Technology
NOx	5 ppmvd @ 15% O ₂ (1-hr rolling average)	Selective catalytic reduction or other equivalent control device
CO	6 ppmvd @ 15% O ₂ (1-hr rolling average)	Oxidation catalyst or equivalent control device
VOC	2 ppmvd @ 15% O ₂ (1-hr rolling average)	Oxidation catalyst or equivalent control device
PM10	Emission limit corresponding to natural gas firing (PUC quality natural gas)	Natural gas firing (PUC quality natural gas)
SO2	Emission limit corresponding to natural gas firing (PUC quality natural gas)	Natural gas firing (PUC quality natural gas)
If applicable, NH3	10 ppmvd @ 15% O ₂ (1-hr rolling average)	

Selective Catalytic Reduction Information, if applicable <div style="font-size: 2em; text-align: center;">N/A</div>	IF NOT INDICATED, PLEASE SPECIFY UNITS OF MEASUREMENT:						
	Ammonia Storage Tank(s):	Tank type:					
		Number of tanks:					
		Tank size:					
		Reactant type:					
		<input type="checkbox"/> Anhydrous ammonia <input type="checkbox"/> Aqueous ammonia <input type="checkbox"/> Urea If aqueous ammonia, indicate ammonia concentration: _____					
		Turnover rate:					
	SCR Manufacturer:						
	SCR Make:						
	SCR Model:						
	Catalyst dimensions:	Length:	ft	Width:	ft	Height:	ft
	Pressure drop across SCR unit:						
	Pressure drop across ammonia injection grid:						
	Space velocity (gas flow rate/catalyst volume):						
Area velocity (gas flow rate/wetted catalyst surface area):							

NEW EQUIPMENT INFORMATION (continued)

Selective Catalytic Reduction Information, if applicable (continued) N/A	Manufacturer's guarantee:	Control efficiency: %	Catalyst life: yrs
	Ammonia injection rate:		
	NOx concentration into SCR unit:		ppmvd @ 15% O2
	SO ₂ oxidation rate:	SO ₃ emissions:	
	Operating temperature range of catalyst: °F		
	Temperature at which ammonia injection will begin: °F		

Oxidation Catalyst Information, if applicable N/A	<i>IF NOT INDICATED, PLEASE SPECIFY UNITS OF MEASUREMENT:</i>			
	Manufacturer:			
	Make:			
	Model:			
	Catalyst dimensions:	Length: ft	Width: ft	Height: ft
	Pressure drop across catalyst:			
	Manufacturer's guarantee:	CO control efficiency: %	Catalyst life: yrs	
		VOC control efficiency: %		
	Space velocity (gas flow rate/catalyst volume):			
	Area velocity (gas flow rate/wetted catalyst surface area):			
	Catalyst cell density (cells per square inch):			
	CO concentration into catalyst:			ppmvd @ 15% O2
	VOC concentration into catalyst:			ppmvd @ 15% O2
	Operating temperature range of catalyst: °F			

Fuel Data	Fuel Type: Natural gas		Specify sulfur content if other than 5 gr/100 scf.
	Higher Heating Value: 1030-1060	Btu/scf	Sulfur Content: gr/100 scf
	MAXIMUM FUEL CONSUMPTION RATE: 0.123 MMscf/hr		
	Exhaust Data:	Flow: 199,537 ACFM	M/sec or m ³ /sec or acfm

On-line Normalized Emission Rate	(If corrected to other than 15% O2, indicate at right)			%O ₂
	Specify by units listed below or indicate other values and units at right:			
	NOX	25 ppmvd on a 1-hr rolling avg. prior to Xonon installation. 5 ppmv after Xonon installation.	lb/MMBtu	GE guarantee
	CO	20 ppmvd on a 1-hr rolling avg. prior to Xonon installation. 10 ppmv after Xonon installation.	Lb/MMBtu	GE guarantee
	VOC (ROG)	ppmvd on a 1-hr rolling avg.	.0030 lb/MMBtu (lhv)	AP 42
	PM10	ppmvd on a 1-hr rolling avg.	.0066 lb/MMBtu (lhv)	AP 42
	SO₂	ppmvd on a 1-hr rolling avg.	.0034 lb/MMBtu (lhv)	AP 42
	If applicable, NH₃	ppmvd on a 1-hr rolling avg.	lb/MMBtu	AP 42

NEW EQUIPMENT INFORMATION (continued)

On-line Mass Emission Rate (each turbine)		Hourly [lbs/hr]	Daily [lbs/day]	Quarterly [lbs/qtr]	Annual [tons/yr]
*Annual emission rates based on assumed 1785 Hours for ROG,SOX, SO2 due to NOx controlling factors. Actual emission rates to be determined based upon initial emission test data	NOX	11.81 (Initial)	283.5 (initial)	N/A for SCAQMD	2.5 (initial)
	CO	5.76 (Initial)	138.2 (initial)	N/A for SCAQMD	1.22 (initial)*
	VOC (ROG)	.35	8.4	N/A for SCAQMD	0.31*
	PM10	.77	18.4	N/A for SCAQMD	0.7*
	SO₂	.4	9.5	N/A for SCAQMD	0.35*
	If applicable, NH3				
Startup and Shutdown Mass Emission Rate (each turbine)		Startup Emissions Hourly [lbs/hr]		Shutdown Emissions Hourly [lbs/hr]	
	NOX	Not available		Not available	
	CO	Not Available		Not Available	
	VOC	Not Available		Not Available	
	PM10	Not Available		Not Available	
	SO₂	Not Available		Not Available	
Commissioning Period Mass Emission Rate (each turbine)		Hourly [lbs/hr]		Daily [lbs/day]	
	NOx	Not Available		Not Available	
	CO	Not Available		Not Available	
	VOC	Not Available		Not Available	
	PM10	Not Available		Not Available	
	SO₂	Not Available		Not Available	

Operating Parameters	Operating Hours: *Estimated based upon guarantee emission rates, actual hours to be determined based upon actual emissions and 10 tpy NOx limit and 4 tpy PM10 limit.	[hrs/day]	[hrs/qtr]	[hrs/yr]
		24	500 (initial), 1785 after Xonon Installation*	500 (initial), 1785 after Xonon Installation*
	Startup Data:	Number of startups per day: Est. 2 max		
		Number of startups per year: Est. 50 initial max,		
		Startup duration: 10 min.		
	Shutdown Data:	Number of shutdowns per day: 2 max.		
		Number of shutdowns per year: Est. 50 initial max,		
		Shutdown duration: 10 min.		

NEW EQUIPMENT INFORMATION (continued)

Facility Annual Emissions and Emissions to be Offset ~ Estimated based upon post Xonon installation and information available today. Although only NOx emissions will exceed offset thresholds, emissions for other pollutants may be higher and will be determined upon start-up tests.		Facility Annual Emissions [tons/yr]	Emissions That Need to be Offset				
			Q1 [lbs/qtr]	Q2 [lbs/qtr]	Q3 [lbs/qtr]	Q4 [lbs/qtr]	Annual [tons/yr]
	NOx	9.99	N/A for SCAQMD				9.99
	CO	11*					0
	VOC	2*					0
	PM10	3*					0
	SO ₂	2*					0

Offsets to be Provided	Offset Ratio	Offsets Required				Source of Offsets
		Q1 [lbs/qtr]	Q2 [lbs/qtr]	Q3 [lbs/qtr]	Q4 [lbs/qtr]	
NOx	1:1					<input checked="" type="checkbox"/> State bank* <input type="checkbox"/> District bank <input type="checkbox"/> Other, specify:
CO						<input type="checkbox"/> State bank <input type="checkbox"/> District bank <input type="checkbox"/> Other, specify:
VOC						<input type="checkbox"/> State bank <input type="checkbox"/> District bank
PM10						<input type="checkbox"/> State bank <input type="checkbox"/> District bank
SO ₂						<input type="checkbox"/> State bank <input type="checkbox"/> District bank

Monitoring and Reporting	What is the make/model of the continuous emissions monitoring system (CEMS), if known? Make: <u>To be determined. Will meet SCAQMD RECLAIM specifications.</u> Model: _____
	<p>The following parameters will be continuously monitored:</p> <p><input checked="" type="checkbox"/> NOx <input checked="" type="checkbox"/> CO (if required by SCAQMD) <input checked="" type="checkbox"/> O₂ <input checked="" type="checkbox"/> Fuel flow rate <input type="checkbox"/> Ammonia injection rate <input type="checkbox"/> Other, please specify: _____</p> <p>Will the CEMS be used to measure both on-line and startup/shutdown emissions? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>

*Note: The maximum amount of NOx offsets that can be acquired from the State bank is 21,125 lbs/yr (10.6 tons/yr) x the applicable distance ratio.

1. **Facility Location (to be also used for air dispersion modeling analysis):** ☒ Urban (area of dense population) ☐ Rural (area of sparse population)
- Will the facility be located within 1,000 feet of a school? ☐ Yes ☒ No
- (Note: Per Section 42301.9 of the California Health and Safety Code, a "school" means any public or private school used for purposes of the education of more than 12 children in kindergarten or any of grades 1 to 12, inclusive, but does not include any private school in which education is primarily conducted in private homes.)
2. **Nearest Receptor:**
- Distance to nearest residence approximately 5280 feet
- Distance to nearest business 400 feet
3. **Air Dispersion Modeling Input Data**
- Stack Parameters:
- Height 45 feet Inside diameter 9 ft x 7 ft.
- Stack Gas Exit Temperature (°K) 770.92
- Is a rain cap present on the exhaust stack? ☐ Yes ☒ No
- Direction of exhaust from structure or device: ☒ Vertical ☐ Horizontal
- Building Dimension Data for Downwash Calculations:
- a) Building Height N/A
- b) Minimum horizontal building dimension N/A
- c) Maximum horizontal building dimension N/A
4. Was an ambient air quality impact analysis required for this project? ☒ Yes ☐ No
- If Yes, was an ambient air quality impact analysis conducted as required by District rules? ☒ Yes ☐ No
- If yes, please attach the analysis and provide an electronic version on disk or CD.
5. Was a health risk assessment required for this project? ☒ Yes ☐ No
- If Yes, was a health risk assessment conducted as required by District rules? ☒ Yes ☐ No
- If Yes, please attach the analysis and provide an electronic version on disk or CD.
6. Please attach a site map for the project. Attachment D

CERTIFICATION

Based on information and belief formed after reasonable inquiry, I certify that the statements and information in and attached to this document are, true, accurate, and complete.

Brian S. Moreau

Responsible Official (Please Print Name)

Brian S. Moreau

Signature of Responsible Official

3/9/01

Date

ATTACHMENT C

**AIR QUALITY APPLICATION FOR SIMPLE-CYCLE
GAS TURBINE GENERATION UNITS**

ATTACHMENT C
California Energy Commission
Air Quality Application for Simple-Cycle Gas Turbine Generation Units

EQUIPMENT DESCRIPTION:

This Authority To Construct Is Issued And Is Valid For This Equipment Only While It Is In The Configuration Set Forth In The Following Description:

Installation Of A Simple-Cycle Gas Turbine Generator Consisting Of:

1. Simple Cycle Gas Turbine, [General Electric], [10B1], [116.3MMBtu/hr (LHV)], [Nominal Electrical Output (10.5MW) at ISO conditions], Natural Gas-Fired, with delayed installation of Xonon combustor for emissions control.
2. ~~Selective Catalytic Reduction NOx Control System, [Make], [Model].~~
3. ~~Ammonia Injection System, [Make], [Model]
(including the ammonia storage tank and control system)~~
4. ~~Oxidation Catalyst System, [Make], [Model].~~
5. Continuous emission monitoring system (CEMS) designed to continuously record the measured gaseous concentrations, and calculate and continuously monitor and record the NOx and CO concentrations in ppmvd corrected to 15% oxygen on a dry basis.

PERMIT CONDITIONS:

The Equipment For Which This Authority To Construct Is Issued May Be Operated Only When In Compliance With The Following Conditions:

1. Consistency with Analyses: Operation of this equipment shall be conducted in accordance with all information submitted with the application (and supplements thereof) and the analyses under which this permit is issued unless otherwise noted below.
2. Conflicts Between Conditions: In the event that any condition herein is determined to be in conflict with any other condition contained herein, then, if principles of law do not provide to the contrary, the condition most protective of air quality and public health and safety shall prevail to the extent feasible.
3. Reimbursement of Costs: All reasonable expenses, as set forth in the District's rules or regulations, incurred by the District for all activities that follow the issuance of this permit, including but not limited to permit condition implementation, compliance verification and emergency response, directly and necessarily related to enforcement of the permit shall be reimbursed by the owner/operator as required by the District's rules or regulations.
4. Access to Records and Facilities: As to any condition that requires for its effective enforcement the inspection of records or facilities by representatives of the District, the Air Resources Board (ARB), the U.S. Environmental Protection Agency (U.S. EPA), or

the California Energy Commission (CEC), the owner/operator shall make such records available or provide access to such facilities upon notice from representatives of the District, ARB, U.S. EPA, or CEC. Access shall mean access consistent with California Health and Safety Code Section 41510 and Clean Air Act Section 114A.

5. Notification of Commencement of Operation: The owner/operator shall notify the District of the date of anticipated commencement of turbine operation not less than 10 days prior to such date. Temporary operations under this permit is granted consistent with the District's rules and regulations.
6. Operations: The gas turbine, emissions controls, CEMS and associated equipment shall be properly maintained and kept in good operating condition at all times when the equipment is in operation.
7. Visible Emissions: No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark or darker than Ringlemann 1 or equivalent 20% opacity.

ALTERNATIVE EMISSION LIMITS

FOR CAUSE, AN APPLICANT MAY PROPOSE AN ALTERNATE NO_x EMISSION LIMIT UP TO, BUT NOT EXCEEDING, 25 PPM FOR THE SUMMER OF 2001. HOWEVER, THE APPLICANT MUST APPLY BACT AND MEET A NO_x EMISSION LIMIT OF 5 PPM PRIOR TO JUNE 1, 2002. THE FOLLOWING ALTERNATE CONDITION 8 SHOULD BE USED IN THIS SITUATION.

8. Emission Limits:
 - 8.1. Oxides of nitrogen (NO_x) emissions from the gas turbine shall not exceed 25 ppmvd @ 15% O₂ (1-hour rolling average), except during periods of startup and shutdown as defined by this permit, through May 31 January 31, 2003. By June 1, 2002 February 1, 2003, NO_x emissions from the gas turbine shall not exceed 5 ppmvd @ 15% O₂ (1-hour rolling average), except during startup and shutdown. The NO_x emission concentrations shall be verified by a District-approved continuous emission monitoring system (CEMS) and during any required source test.
 - 8.2. ~~By June 1, 2002, ammonia emissions from the gas turbine shall not exceed 10 ppmvd @ 15% O₂ (1-hour rolling average), except during periods of startup and shutdown as defined in this permit. The ammonia emission concentration shall be verified by the continuous recording of the ratio of the ammonia injection rate to the NO_x inlet rate to the SCR control system (molar ratio). A minimum NH₃/NO_x molar ratio of 1.0 shall be used at all times. The maximum allowable NH₃/NO_x molar ratio shall be determined during any required source test, and shall not be exceeded until reestablished through another valid source test.~~
 - 8.3. ~~By June 1, 2002 February 1, 2003, carbon monoxide (CO) emissions from the gas turbine shall not exceed 6 10 ppmvd @ 15 % O₂ (1-hour rolling average), except during periods of startup and shutdown as defined in this permit. The CO emission concentration shall be verified by a District-approved CEMS and during any required source test.~~

- 8.4 By ~~June 1, 2002~~ February 1, 2003, volatile organic compound (VOC) emissions from the gas turbine shall not exceed 2 ppmvd @ 15% O₂ (1-hour rolling average), except during periods of startup and shutdown as defined in this permit. The VOC emission concentration shall be verified during any required source test.
- 8.5 Particulate matter emissions less than ten microns in diameter (PM₁₀) from the gas turbine shall not exceed 0.77 pounds per hour, except during periods of startup and shutdown as defined in this permit. The PM₁₀ mass emission rate shall be verified during any required source test.
- 8.6 Oxides of sulfur emissions (SO_x) from the gas turbine shall not exceed 0.40 pounds per hour, except during periods of startup and shutdown as defined in this permit. The SO_x emission rate shall be verified during any required source test.
9. Turbine Startup: Startup of the gas turbine shall not exceed a time period of 10 minutes each per occurrence, or another time period based on good engineering practice and approved in advance by the District. The startup clock begins with the turbine's initial firing and continues until the unit meets the emission concentration limits.
10. Turbine Shutdown: Shutdown of the gas turbine shall not exceed a time period of 10 minutes each per occurrence, or another time period based on good engineering practice and approved in advance by the District. Shutdown begins with initiation of the turbine shutdown sequence and ends with the cessation of turbine firing.
11. Mass Emission Limits: Mass emissions from the gas turbine shall not exceed the daily, quarterly, and annual mass emission limits listed in Table 1 and Table 2 below.

TABLE 1 – MASS EMISSION LIMITS (~~EXCLUDING INCLUDING~~ STARTUPS AND SHUTDOWNS) THE FOLLOWING EMISSION LIMITS SHOULD BE APPLIED TO THE FACILITY UNTIL ACTUAL EMISSION RATES CAN BE DETERMINED UPON INSTALLATION OF XONON.

Pollutant	Daily (lb)	Quarterly (tons)	Annual (tons)
NO _x (as NO ₂)	283.5	N/A for SCAQMD	2.50
VOC	8.4	N/A for SCAQMD	0.9
CO	138.2	N/A for SCAQMD	7
SO _x (as SO ₂)	9.5	N/A for SCAQMD	0.9
PM ₁₀	18.4	N/A for SCAQMD	0.9

TABLE 2 – MASS EMISSION LIMITS - STARTUPS AND SHUTDOWNS

Pollutant	Annual (tons)
NO _x (as NO ₂)	Not Available

VOC	Not Available
CO	Not Available
SOx (as SO ₂)	Not Available
PM10	Not Available

The daily, quarterly and annual mass limits are on a calendar basis. Compliance shall be based on sliding average one-hour readings through the use of process monitors (e.g., fuel use meters), CEMS, and source test results; and the monitoring, recordkeeping and reporting conditions of this permit.

12. Operational Limits: In order to comply with the emission limits of this rule, the owner/operator shall comply with the following operational limits:
 - (a) The heat input to the gas turbine **initially** shall not exceed the following:

Hourly:	129 MMBtu/hr
Daily:	3096 MMBtu/day
Quarterly:	N/A
Annual:	N/A To be replaced with annual NOx limits not to exceed 10 tons per year and PM10 limits not to exceed 4 tons per year.
 - (b) Only PUC Quality natural gas (General Order 58-a) shall be used to fire the gas turbine. The natural gas shall not contain total sulfur in concentrations exceeding 5 gr/100 scf or hydrogen sulfide exceeding 0.25 gr/100 scf.
 - (c) The owner/operator of the gas turbine shall comply with the daily, quarterly, and annual emission limits listed in Table 1 by ~~not operating more than 24 hours per day, 500 hours per calendar quarter, or 500 hours per year.~~ monitoring NOx emissions and not exceeding 10 tpy, and by not exceeding 4 tpy PM10 based upon an emission rate to be established upon startup source tests.
 - (d) ~~The damper on the gas turbine bypass stack shall remain in a fully closed position except during periods of startup and shutdown as defined in this permit.~~
 - (e) The owner/operator of the gas turbine shall comply with the annual emission limits listed in Table 2 by limiting the turbine startups to no more than 50 occurrences per year, and by limiting turbine shutdowns to no more than 50 occurrences per year.
13. Monitoring Requirements: The owner/operator shall comply with the following monitoring requirements:
 - (a) The gas turbine exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods.
 - (b) ~~The ammonia injection system shall be equipped with an operational ammonia flowmeter and injection pressure indicator accurate to plus or minus five percent at full scale and calibrated once every twelve months.~~
 - (c) The gas turbine exhaust shall be equipped with continuously recording emissions monitor(s) for NOx, CO (if required by SCAQMD) and O2. Continuous emissions

monitors shall comply with the requirements of 40 CFR Part 60, Appendices B and F, and 40 CFR Part 75, and shall be capable of monitoring concentrations and mass emissions during normal operating conditions and during startups and shutdowns.

- (d) ~~The fuel heat input rate shall be continuously recorded using District-approved fuel flow meters along with quarterly fuel compositional analyses for the fuel's higher heating value (wet basis).~~ Fuel throughput shall be monitored in accordance with SCAQMD Regulation XX protocol for RECLAIM facilities.
- (e) The total sulfur and hydrogen sulfur content of the fuel gas shall be analyzed on a quarterly basis.

14. Source Testing/RATA: Within sixty days after startup of the gas turbines, and at a minimum on an annual basis thereafter, a relative accuracy test audit (RATA) must be performed on the CEMS in accordance with 40 CFR Part 60 Appendix B Performance Specifications and a source test shall be performed. Additional source testing may be required at the discretion of the District to address or ascertain compliance with the requirements of this permit. The written test results of the source tests shall be provided to the District within thirty days after testing. A complete test protocol shall be submitted to the District no later than 30 days prior to testing, and notification to the District at least ten days prior to the actual date of testing shall be provided so that a District observer may be present. The source test protocol shall comply with the following: measurements of NO_x, CO, VOC, and stack gas oxygen content shall be conducted in accordance with ARB Test Method 100; measurements of PM₁₀ shall be conducted in accordance with ARB Test Method 5; and measurements of ammonia shall be conducted in accordance with Bay Area Air Quality Management District test method ST-1B. Alternative test methods, and source testing scope, may also be used to address the source testing requirements of the permit if approved in advance by the District. The initial and annual source tests shall include those parameters specified in the approved test protocol, and shall at a minimum include the following:

- a. NO_x (as NO₂) – ppmvd at 15% O₂ and lb/MMBtu (inlet to SCR (if applicable), and Exhaust);
- b. ~~Ammonia – ppmvd at 15% O₂ (Exhaust);~~
- c. CO – ppmvd at 15% O₂ and lb/MMBtu (Exhaust);
- d. VOC – ppmvd at 15% O₂ and lb/MMBtu (Exhaust);
- e. PM₁₀ – lb/hr (Exhaust);
- f. SO_x – lb/hr (Exhaust);
- g. Natural gas consumption, fuel High Heating Value (HHV), and total fuel sulfur content;
- h. Turbine load in megawatts;
- i. Stack gas flow rate (SDCFM) calculated according to procedures in U.S. EPA Method 19.
- j. Exhaust gas temperature (°F)
- k. ~~Ammonia injection rate (lb/hr or moles/hr)~~

15. A written quality assurance program must be established in accordance with 40 CFR Part 75, Appendix B and 40 CFR Part 60 Appendix F.

16. The owner/operator shall comply with the applicable requirements of 40 CFR Part 60 Subpart GG.
17. The owner/operator shall notify the District of any breakdown condition consistent with the District's breakdown regulations.
18. The District shall be notified in writing in a timeframe consistent with the District's breakdown regulations following the correction of any breakdown condition. The breakdown condition shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed, and the actions taken to restore normal operations.
19. Recordkeeping: The owner/operator shall maintain the following records:
 - (a) hourly, daily, quarterly and annual quantity of fuel used and corresponding heat input rates;
 - (b) the date and time of each occurrence, duration, and type of any startup, shutdown, or malfunction along with the resulting mass emissions during such time period;
 - (c) emission measurements from all source testing, RATAs and fuel analyses;
 - (d) daily, quarterly and annual hours of operation;
 - (e) hourly records of NO_x and CO, emission concentrations and hourly ammonia injection rates and ammonia/NO_x ratio.
 - (f) for the continuous emissions monitoring system; performance testing, evaluations, calibrations, checks, maintenance, adjustments, and any period of non-operation of any continuous emissions monitor.
20. All records required to be maintained by this permit shall be retained by the permittee for a period of five years and shall be made readily available for District inspection upon request.
21. Reporting: The owner/operator shall submit to the District a written report for each calendar quarter, within 30 days of the end of the quarter, which shall include:
 - (a) Daily and quarterly fuel use and corresponding heat input rates;
 - (b) Daily and quarterly mass emission rates for all criteria pollutants during normal operations and during other periods (startup/shutdown, breakdowns);
 - (c) Time intervals, date, and magnitude of excess emissions;
 - (d) Nature and cause of the excess emission, and corrective actions taken;
 - (e) Time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments;
 - (f) A negative declaration when no excess emissions occurred;
 - (g) Results of quarterly fuel analyses for HHV and total sulfur/hydrogen sulfide content; and
 - (h) A declaration that the owner/operator is in compliance with Governor's Executive Order D-26-01 and any other applicable Executive Order.
22. Emission Offsets: The owner/operator shall offset the project emissions in the amount and at the ratios outlined in Table 3. Emission offsets obtained through the State emission offset bank shall be valid for three years from the issuance of this permit at which time they shall become null and void. The owner/operator shall either obtain

replacement emission offsets from the District or shall cease operations at the end of this 3-year period.

TABLE 3 – EMISSION OFFSETS

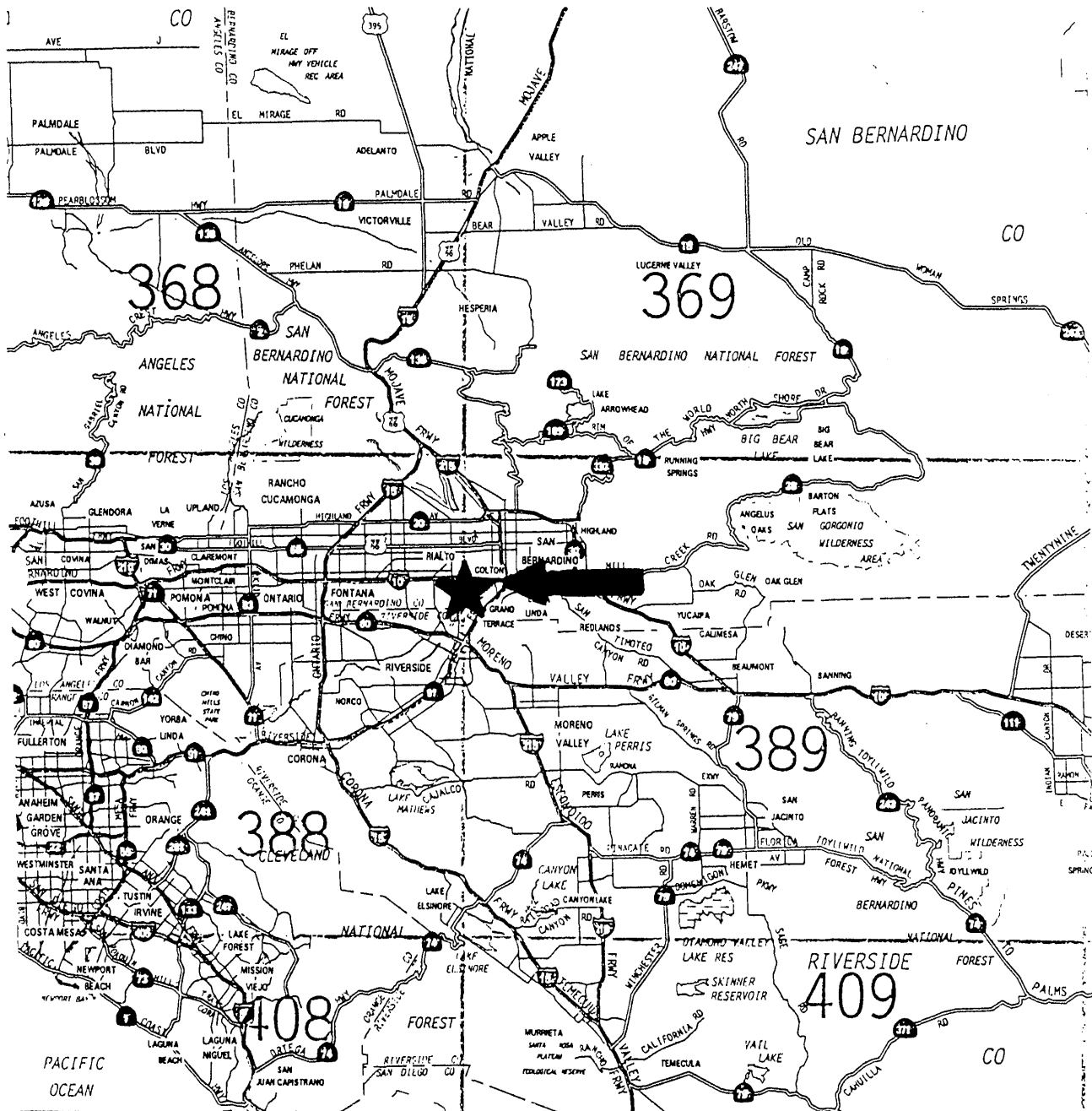
Pollutant	Emissions Requiring Offsets (tons/yr)	Offset Ratio	Total ERCs Required (tons/yr)	Source of ERCs
NOx (as NO ₂)	9.99	1:1	9.99	State Bank
VOC	0		0	
CO	0		0	
SOx (as SO ₂)	0		0	
PM10	0		0	

23. Executive Order Compliance: The owner/operator shall comply with the provisions of Governor's Executive Order D-26-01 and any other applicable Executive Order.
24. District Operating Permit: The owner/operator shall apply for and obtain all required operating permits from the District according to the requirements of the District's rules and regulations.

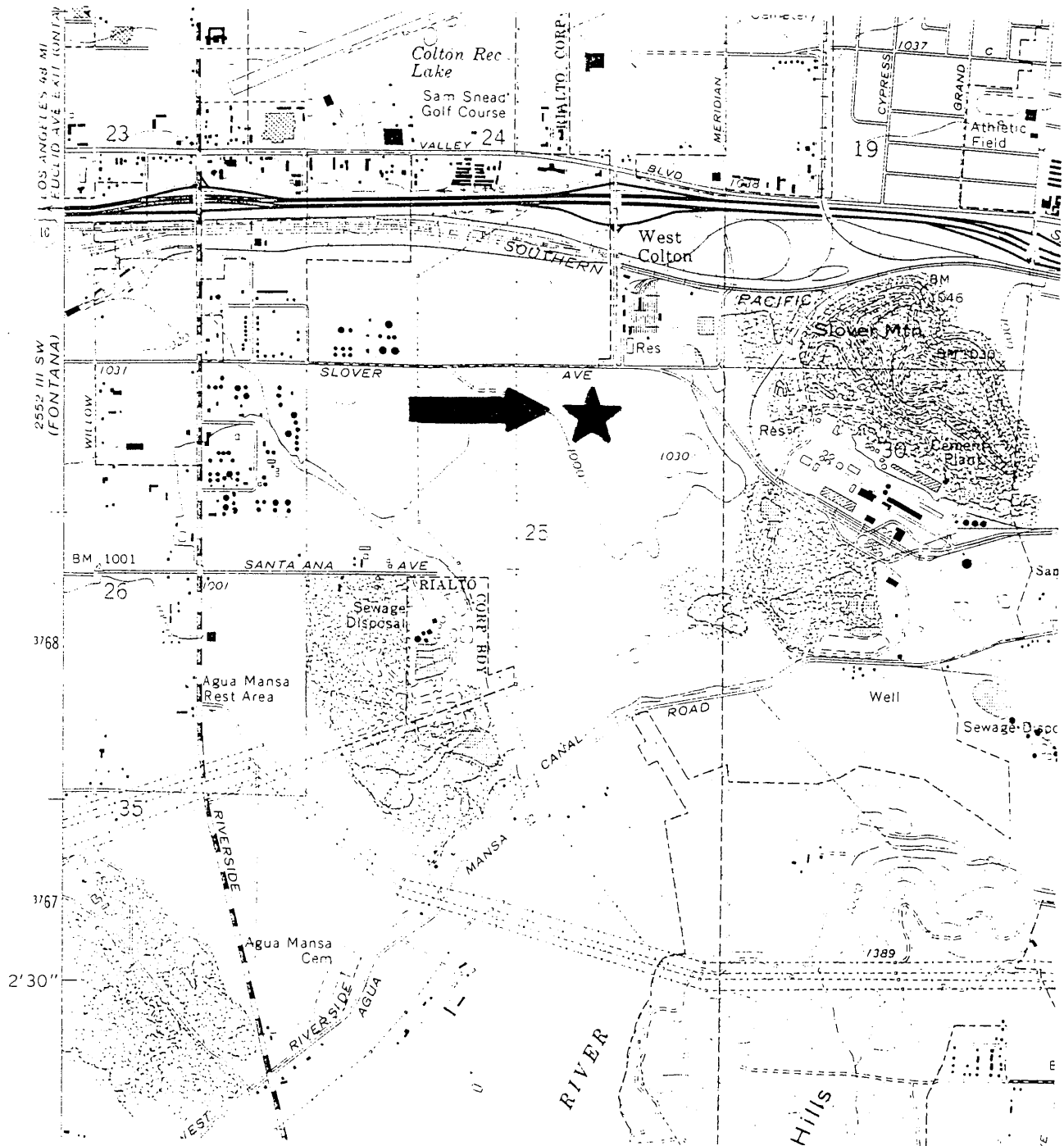
ATTACHMENT D

LOCATION MAPS AND SITE DIAGRAMS

Alliance Colton, LLC Drews Substation Regional Location Map



Alliance Colton, LLC
Drews Substation
Facility Location Map



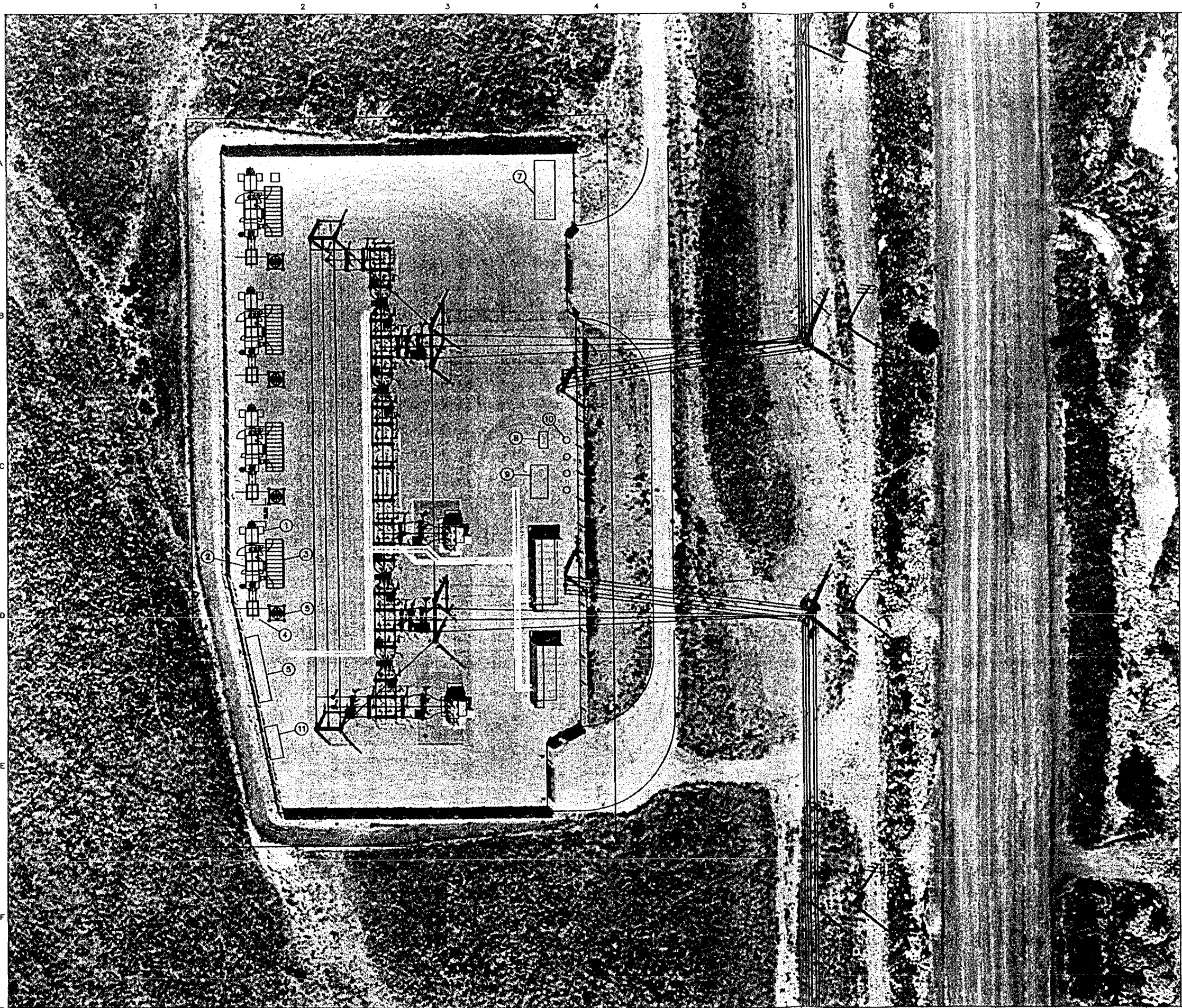


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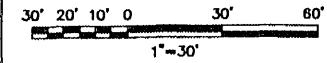



DSC0188

Drews Site Photos



- ① 10 KV SYNCHRONOUS GENERATOR
- ② GAS TURBINE ENCLOSURE
- ③ AIR FILTER
- ④ TURBINE EXHAUST STACK W/ PERSONAL PLATFORM
- ⑤ LUBE OIL HEAT EXCHANGER
- ⑥ ELECTRICAL CONTROL ENCLOSURE (TURBINE MCC AND GEN. CONTROLS)
- ⑦ FUEL GAS COMPRESSION UNIT
- ⑧ PLANT AUXILIARY TRANSFORMER
- ⑨ GENERATOR NEUTRAL ROUNDING REACTORS
- ⑩ TURBINE WASH CART STORAGE



 BLACK & VEATCH		
ENGINEER	DRAWN	DATE
CHECKED	DATE	03/01/01

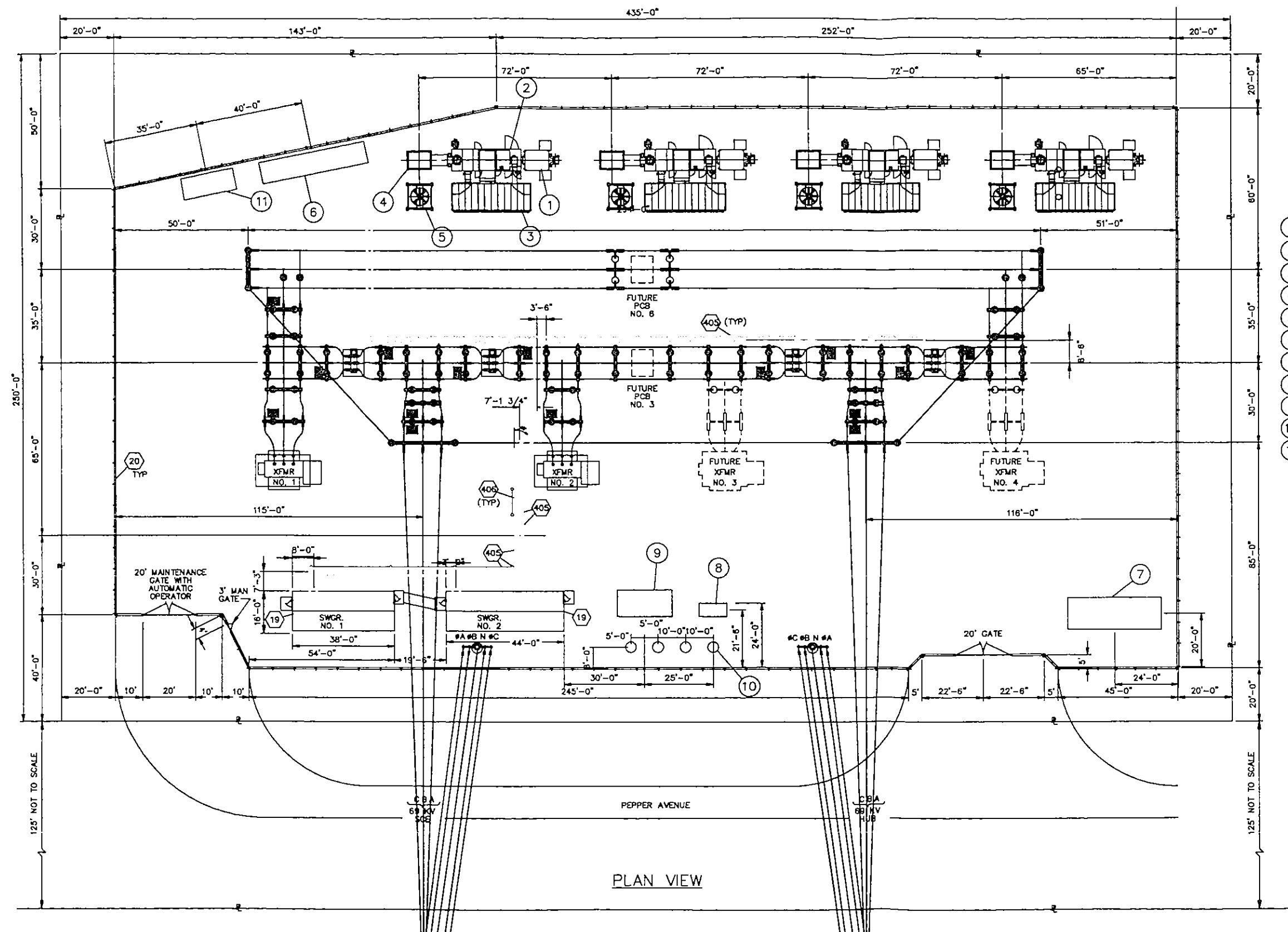
CITY OF COLTON
COLTON, CALIFORNIA

DREWS SUBSTATION
AERIAL PLAN

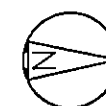
PROJECT	DRAWING NUMBER	REV
99918		0
CODE		
AREA		

NO	DATE	REVISIONS AND RECORD OF ISSUE	BY
			CHK/APP/FLM


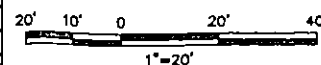
SDF
AD/SLS/006 D1
03/01/01 7:48a
ACAD v12



- ① 10 KV SYNCHRONOUS GENERATOR
- ② GAS TURBINE ENCLOSURE
- ③ AIR FILTER
- ④ TURBINE EXHAUST STACK
- ⑤ LUBE OIL HEAT EXCHANGER
- ⑥ ELECTRICAL CONTROL ENCLOSURE (TURBINE MCC AND GEN. CONTROLS)
- ⑦ FUEL GAS COMPRESSION UNIT
- ⑧ PLANT AUXILIARY TRANSFORMER
- ⑨ GENERATOR SWITCHGEAR
- ⑩ GENERATOR NEUTRAL GROUNDING REACTORS
- ⑪ TURBINE WASH CART STORAGE



PLAN VIEW

 BLACK & VEATCH

ENGINEER	DAC	DRYIN	DJL
CHECKED	DAC	DATE	11/30/84

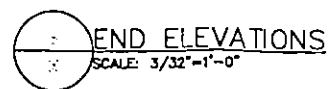
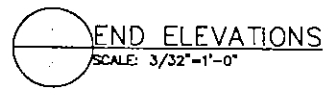
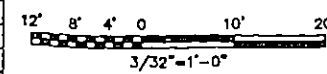
CITY OF COLTON
COLTON, CALIFORNIA


DREWS SUBSTATION
SITE PLAN

PROJECT	DRAWING NUMBER	REV
27428	27-1	4

CODE	
AREA	

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2/25/01 9:35a

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 BLACK & VEATCH		CITY OF COLTON COLTON, CALIFORNIA		PROJECT 99918	DRAWING NUMBER ELEVATION 3	REV 0
ENGINEER DAC	DRAWN DJL	DREWS SUBSTATION ELEVATIONS-GENERATION ADDITION		CODE		
CHECKED DAC	DATE 11/30/94			AREA		

ATTACHMENT E

INTERCONNECTION APPLICATIONS



The Gas Company™

REQUEST FOR NON-RESIDENTIAL GAS FACILITIES

PROJECT INFORMATION

PROJECT LOCATION <u>559 S. Pepper</u>	CITY <u>Colton</u>
COUNTY <u>San Bernardino</u>	CROSS STREET <u>Slover</u>

APPLICANT INFORMATION

NAME (As it should appear on Contract) <u>Alliance Colton LLC</u>		DAY PHONE # (Include Area Code) <u>909-730-2328</u>	
STREET ADDRESS (Include Apt/Suite, or Building Info - No P.O. Box) <u>1750 S. Lincoln St., Suite 114</u>	CITY <u>Littleton</u>	STATE <u>CO</u>	ZIP CODE <u>80122</u>
MAILING ADDRESS (If different than street address)	CITY	STATE	ZIP CODE
CONTACT NAME AND TITLE <u>Brian S. Moreau - Project Manager</u>	DAY PHONE # (Include Area Code) <u>303-730-2328</u>	FAX # <u>303-730-2518</u>	
PAGER # (Include Area Code)	MOBILE # (Include Area Code) <u>303-378-0263</u>	E-MAIL ADDRESS <u>brian.moreau@alliance-power.com</u>	

CONSTRUCTION CONTACTS

NAME	TITLE	DAY PHONE # (Include Area Code)	FAX #
<u>Brian S. Moreau</u>	<u>Project Manager</u>	<u>303-730-2328</u>	<u>303-730-2518</u>
<u>Mark Olson</u>	<u>Asst. Specialist</u>	<u>909-836-3035</u>	<u>661-856-9853</u>

TYPE OF GAS INSTALLATION REQUESTED: ☐ Main ☒ Service / MSA ☐ StubPREFERRED METHOD OF INSTALLATION: ☐ Applicant Provided Joint Trench ☒ Gas Company Provided Gas Only Trench
☐ Applicant Provided Gas Only TrenchESTIMATED GAS INSTALLATION START DATE: 5/15/01TYPE OF BUSINESS: ☐ Commercial, ☐ Food Service, ☐ IndustrialSIC Code: 4911TYPE OF CONSTRUCTION: ☒ New ☐ Existing, (account #: _____)

The following equipment information is REQUIRED to process your Application.

LOAD INFORMATION (Please indicate the gas equipment being installed and the associated load. Prepare a separate form for each unit.)

List All Equip. (New and Existing)	N e w	E x i s t i n g	Equip. Type	Equip. Load per Unit (MBTU/hr.)	Operating Schedule (Hrs/Day) (Days/Wk) (Mons/Yr)			Type of Alternate Fuel (If applicable)	Equipment Function
Item 1	X		Combustion Turbine	4137,500	14	5	12	None	Electric Generator
Item 2									
Item 3									
Item 4									
Item 5									
Item 6									
Item 7									

*If additional space is needed, please add another copy of this page.

Gas Pressure Requested: 180-220 psig 8" Water Column (Standard): _____ 5 lbs. _____ Other _____Please provide Gas Company Representative, if known: Mario RomeroPlease provide me with additional information on: ☐ Applicant Design ☐ Applicant Install

Alliance Power, Inc.

February 22, 2001

Ms. Teri T. Kuniyuki
Southern California Edison Company
Grid Contracts and Business Development
P.O. Box 800
2244 Walnut Grove Avenue
Rosemead, CA 91770

Subject: ISO Summer Reliability Generation in the City of Colton

Dear Teri:

On behalf of the City of Colton Electric Utility, Alliance Power hereby submits an application to interconnect new peaking generation to the ISO controlled grid. The new generation will be owned and operated by Alliance Colton LLC on substation property owned by the City of Colton. Alliance Colton's generation facilities consist of simple-cycle gas turbine generators, and will interconnect at 12.47kV at the Draws site, and at 66kV at the Century site. Both of these sites have a common point of interconnection to the Southern California Edison system at the Colton substation 66kV bus via existing transmission facilities.

In accordance with SCE's WDAT section 6.2(i) through (ix), Alliance Power provides the following requested information:

- (i) Tim Trewyn, Assistant Electric Utility Director
City of Colton
160 South 10th Street
Colton, CA 92324
909-370-6190
909-370-6104 fax
- (ii) It is the intention of Alliance Colton LLC to sell generation into the ISO controlled grid in accordance with the requirements of the Summer Reliability Agreement with the ISO. The City of Colton currently operates and has operated an electric utility since 1895, therefore, per Section 2.11, the City of Colton Electric Utility is an eligible customer.
- (iii) The Point of Delivery to SCE's system is the 66kV bus at Colton substation. It is the understanding of Alliance Colton that the nearest ISO delivery point is SCE's Vista 230kV substation.
- (iv) The auxiliary loads for this facility will be procured at retail rates from the City of Colton Electric Utility. Each generating site will be served from Colton's 12kV distribution system.

Power Engineering and Environmental Solutions - Colorado, California, Virginia
Telephone (303) 730-2328 Fax (303) 730-2518

and will provide a total of 1.2MW of 3 phase, 480/277 volt retail service while the peaking units are running. Total estimated annual load is 600 MWH, which will indirectly be provided by the peaking units themselves through Colton's distribution system. No Wholesale Distribution Loads are requested at this time.

- (v) No interruptible loads are anticipated at this time.
- (vi) Southern California Edison has contract documents which clearly demonstrate that the City of Colton possesses generation and transmission resources. Incremental requirements for generation and transmission beyond the City's resources are available to the City (as they are available to and required by SCE) through the California Power Exchange, the California Independent System Operator, and other markets and third parties.
- (vii) Each site will have four, 10MW GE 10 combustion turbines operated as simple-cycle peaking units, for a total capacity of 80MW. Each unit can be operated at 0.9 leading or lagging power factor. For 2001, each unit will be limited to no more than 500 hours of operation due to the air permit requirements. In 2002 through 2006, the units will be equipped with BACT, and will not be restricted in their use based on air permitting. For these years, they will be economically dispatched as peaking units, with a projected operation of approximately 1000 hours per year. At this time, there are no known restrictions on the periods of operation. Maintenance will be performed off-peak, as required.
- (viii) Alliance Colton LLC will execute the ISO's Participating Generator Agreement and the Meter Service Agreement on or about April 1, 2001. In addition, see response to item (vi) above.
- (ix) The Service Commencement Date is June 1, 2001. The term of the requested Distribution Service is for 15 years.
- (x) Please advise if any additional information is required.

As required in Section 6.2 of SCE's WDAT, we have included a deposit of \$9132.42, equal to \$2.00 per average monthly kilowatt of generation based on 80MW of net capacity for 500 hours of operation per year (5.7% capacity factor).

Enclosed with this letter are the equipment data sheets for the generators and transformers, and single line diagrams of both proposed generating facilities.

Please review this application for completeness, and advise if you require additional information. Due to the urgent need to site this new generation for the summer 2001 peak season, we are requesting an expedited review and approval of this application. Based on Governor Davis' executive order D-26-01, it is our understanding that we can expect a completed interconnection study within seven days. If you have any questions or need any further information, please call the undersigned at 303-730-2328.

Ms. Teri Kuniyuki
Southern California Edison Company

Page 3
February 22, 2001

Sincerely,
Alliance Power, Inc.



Brian S. Moreau, P.E.
Project Manager

Cc: Tim Trewyn, City of Colton
James I. Michael, Alliance Power
Brian O'Neill, Alliance Power

ATTACHMENT F

ADJACENT PROPERTY OWNERS / LAND USE

List of Property Owners in 500' Radius of Drews Substation

Plot #15

CalMat Co.

3200 San Fernando Rd.

Los Angeles, CA 90065-1415

Plot #13

California Portland Cement Co.

2025 E. Financial Way

Glendora, CA 91740

CenStats DataWell
Population Profile --- 1990 Census of Population and Housing
Census Tract 0040
San Bernardino County, California
Data displayed in profiles and comparisons of tracts are based on the 1990
state
and county geography.

PERSONS

Universe: Persons

Total.....	10,265
------------	--------

HOUSEHOLDS

Universe: Households

Total.....	2,839
------------	-------

RACE

Universe: Persons

White.....	7,217
Black.....	418
American Indian, Eskimo, or Aleut.....	157
Asian or Pacific Islander.....	153
Other race.....	2,320

PERSONS OF HISPANIC ORIGIN

Universe: Persons of Hispanic origin

Total.....	4,468
------------	-------

HOUSEHOLD TYPE AND RELATIONSHIP

Universe: Persons

In family households:

Householder.....	2,394
Spouse.....	1,896

Child:

Natural-born or adopted.....	3,670
Step.....	387
Grandchild.....	249
Other relatives.....	699
Nonrelatives.....	331

In nonfamily households:

Male householder:

Living alone.....	197
Not living alone.....	78

Female householder:

Living alone.....	141
Not living alone.....	29
Nonrelatives.....	162

In group quarters:

Institutionalized persons.....	0
Other persons in group quarters.....	32

AGE BY CITIZENSHIP

Universe: Persons

Under 18 years:

Native.....	3,551
-------------	-------

Foreign born:

Naturalized citizen.....	92
Not a citizen.....	84

18 years and over:

Native.....	5,211
-------------	-------

Foreign born:

Naturalized citizen.....	418
Not a citizen.....	909

EDUCATIONAL ATTAINMENT

Universe: Persons 18 years and over

Less than 9th grade.....	894
9th to 12th grade, no diploma.....	1,675
High school graduate (includes equivalency).	1,817
Some college, no degree.....	1,311
Associate degree.....	346
Bachelor's degree.....	339
Graduate or professional degree.....	156

SEX BY EMPLOYMENT STATUS

Universe: Persons 16 years and over

Male:

In labor force:

In Armed Forces.....	12
----------------------	----

Civilian:

Employed.....	2,520
Unemployed.....	288

Not in labor force.....	791
-------------------------	-----

Female:

In labor force:

In Armed Forces.....	11
----------------------	----

Civilian:

Employed.....	1,411
Unemployed.....	187

Not in labor force.....	1,683
-------------------------	-------

MEDIAN HOUSEHOLD INCOME IN 1989

Universe: Households

Median household income in 1989.....	33,305
--------------------------------------	--------

PER CAPITA INCOME IN 1989

Universe: Persons

Per capita income in 1989.....	9,998
--------------------------------	-------

PER CAPITA INCOME IN 1989 BY RACE

Universe: Persons

Per capita income in 1989:

White.....	11,017
Black.....	10,818
American Indian, Eskimo, or Aleut.....	7,678
Asian or Pacific Islander.....	3,923
Other race.....	7,235

PERSONS WITH INCOME IN 1989 BELOW POVERTY LEVEL

Universe: Persons for whom poverty status is determined

Percent below poverty level.....	16.8
----------------------------------	------

RATIO OF INCOME IN 1989 TO POVERTY LEVEL

Universe: Persons for whom poverty status is determined

Under .50.....	551
----------------	-----

.50 to .74.....	595
.75 to .99.....	566
1.00 to 1.24.....	243
1.25 to 1.49.....	536
1.50 to 1.74.....	586
1.75 to 1.84.....	137
1.85 to 1.99.....	424
2.00 and over.....	6,532

TENURE BY RACE OF HOUSEHOLDER

Universe: Occupied housing units

Owner occupied:

White.....	1,633
Black.....	82
American Indian, Eskimo, or Aleut.....	50
Asian or Pacific Islander.....	38
Other race.....	356

Renter occupied:

White.....	448
Black.....	46
American Indian, Eskimo, or Aleut.....	6
Asian or Pacific Islander.....	0
Other race.....	152

TENURE BY RACE OF HOUSEHOLDER

Universe: Occupied housing units with householder of Hispanic origin

Owner occupied:

White.....	296
Black.....	0
American Indian, Eskimo, or Aleut.....	15
Asian or Pacific Islander.....	15
Other race.....	356

Renter occupied:

White.....	103
Black.....	6
American Indian, Eskimo, or Aleut.....	6
Asian or Pacific Islander.....	0
Other race.....	152

Data from the STF-3A CD-ROM

Source: U.S. Census Bureau

e-mail technical questions and comments.

Created 12-Mar-01

CenStats DataWell
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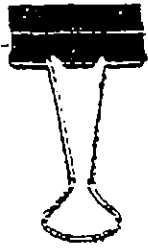
Source: U.S. Census Bureau

e-mail technical questions and comments.

Created 12-Mar-01

ATTACHMENT G

SITE LEASE AGREEMENT



CITY OF COLTON
DREWS SUBSTATION LEASE AGREEMENT
WITH ALLIANCE COLTON, LLC

1. PARTIES AND DATE.

This Lease Agreement ("Agreement") is made and entered into this 6th day of December, 2000 ("Effective Date") by and between the City of Colton (hereinafter referred to as "City"), a municipal corporation, and Alliance Colton, LLC (hereinafter referred to as "Lessee"), a California corporation. The City and Lessee are sometimes collectively referred to herein as the "Parties."

2. RECITALS.

2.1 Premises. The City is the owner of that certain real property located at San Bernardino County Assessor's Parcel Number 025808114, at 559 S. Pepper Avenue, south of Slover Avenue, in the City of Colton, County of San Bernardino, State of California, commonly known as the Drews Substation and more particularly described in Exhibit "A" attached hereto and incorporated herein by reference ("City Property"). The City desires to lease to Lessee and Lessee desires to lease from the City certain portions of the City Property more particularly described in Exhibit "B" attached hereto and incorporated herein by reference ("Premises"). Lessee shall have the right to use the Premises for the purpose of installing, removing, replacing, modifying, maintaining, and operating electric generation facilities and equipment (collectively, "Lessee Facilities") in exchange for due and adequate consideration, the receipt and sufficiency of which are acknowledged by the Parties and further described and set forth in this Agreement.

2.2 Access. During the Term of this Agreement, as defined herein, Lessee shall have supervised access, including ingress and egress, to the Premises to install, operate, maintain and remove the Lessee's Facilities, as defined below, under the following conditions: (1) Lessee shall give 24 hours prior written notice to City when requesting access (Written notice can include the lessee submitting a monthly schedule to the City identifying the timetable for access to Premises for routine operations and maintenance); (2) at the City's option, a City representative shall remain on the Premises during the period of access to Lessee, and (3) prior to and during the period of access, Lessee shall not be in default of any obligation under this Agreement. In the event the Lessee Facilities fail to operate, Lessee may have immediate supervised access to the Premises, provided such access does not disrupt City activities. The City shall not unreasonably deny access to Lessee in the event of such an emergency. Access will be provided to Lessee in those portions of the City Property that are specifically designed for access, ingress, and egress to the Premises.

3. TERMS.

3.1 Term. The term ("Term") of this Agreement shall be for fifteen (15) years commencing upon January 31, 2001 (the "Commencement Date") and expiring on January 31, 2016, unless terminated earlier, as provided herein.

3.2. Option to Renew. Provided Lessee is not in material default under any of the terms of this Agreement, Lessee may request renewal of this Agreement on the terms and conditions herein contained for 2 additional terms ("Renewal Term") of 5 year periods upon written notice to City of Lessee's intent to do so at least one hundred eighty (180) days prior to the expiration of the Term or any Renewal Term. Provided Lessee is not in material default under any of the terms of this Agreement, City shall grant the request for renewal within 90 days of receipt of Lessee's written notice requesting renewal. If the City does not respond to the written notice, the additional terms requested shall be deemed to be approved. The terms and conditions for each Renewal Term shall be the same terms and conditions of this Agreement, except that the consideration payable for the Renewal Terms shall be in accordance with the provisions of Section 3.6 herein.

3.3 Facilities; Utilities; Access.

3.3.1 Subject to the provisions of Sections 2.2, 3.9.3 and 3.10 of this Agreement, Lessee has the right to erect, maintain and operate on the Premises the Lessee Facilities, including, without limitation, generating equipment and associated electrical and gas auxiliary equipment. The Lessee Facilities shall be used for electric generation purposes, and for no other purpose. A schematic of the Lessee Facilities ("Schematic") is attached as Exhibit "C" hereto and incorporated herein by reference. Lessee shall not deviate from the approved Schematic without the prior written approval of City. Provided all work shall comply with the Schematic, Lessee has the right to install the Lessee Facilities on the Premises. All of Lessee's construction and installation work shall be performed at Lessee's sole cost, expense and liability and in conformance with the latest editions of the "Green Book" or the Standard Specifications for Public Works construction, as written and promulgated by the Joint Cooperative Committee of the Southern California Chapter of the American Public Works Association, the National Electrical Code, (NEC applicable to 600V class and below only) the National Electrical Safety Code, and CPUC General Orders 95 and 128. Lessee agrees to obtain air, and other construction permits and to furnish and transport all necessary labor, materials, tools, implements, and appliances required to install and completely finish the Lessee Facilities in a good and workmanlike manner, to the satisfaction and approval of City, free of any and all liens and claims of laborers, materialmen, suppliers, and subcontractors, and in conformity with the Schematic and all applicable state, county, and municipal laws, codes, and regulations, including applicable standards of the American National Standards Institute, the American Society of Mechanical Engineers, and the Institute of Electrical and Electronics Engineers. The site is zoned for electrical infrastructure, which includes power generation. The City will be designated the lead agency to secure a finding of no significant impact or negative declaration for environmental impact.

EXHIBIT "A"

DESCRIPTION OF CITY PROPERTY

[See Also Attached Aerial Image]

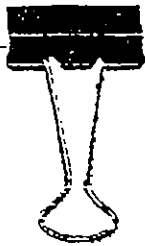
The Dews Substation lies within City owned property, San Bernardino County Assessors Parcel Number 025808114, at 559 S. Pepper Avenue, south of Slover Avenue. The parcel is 435 feet long north to south and 250 feet wide east to west, comprising an area of 2.5 acres. The area within the existing walls of the substation is approximately 420 feet long and 210 feet wide. This area narrows in the southerly two-fifths of the station to a width of 160 feet. The areas to the south, west, and north are protected habitat for the Delhi Sand Flower-loving Fly. To the east is right-of-way for an extension of Pepper Avenue to the south. The easterly wall can be relocated another 20 feet to the east.

The Substation and transmission lines connecting it to the Colton system are designed to accommodate four 15/20/25 MVA 66000:12470 volt power transformers spaced along a ring bus. Two transformers are currently installed. Maximum load on the station to date has been approximately 8 MW. The primary load is the San Bernardino Medical Center located to the north, which is supplied by two 12.47kV circuits from the substation. The other load is the San Bernardino-Colton Tertiary Water Treatment Plant to the South, which is supplied by a single 12.47kV circuit. Existing switchgear facilities are arranged in a breaker and one-half configuration, and space provisions for three additional circuit breakers exist in the present switchgear buildings. There is ample space for the location of multiple gas turbine or reciprocating engine powered generators.

EXHIBIT "B"

DESCRIPTION OF PREMISES Lessee's premises at 559 S. Pepper, as described in Exhibit "A", shall be bounded by the following lines: Commencing at the southwest corner of the City Property, thence 50 feet east and 20 feet north to a Point of Beginning, thence northwesterly 146.08 feet to a point 143 feet north and 30 feet west of the Point of Beginning, thence north 252 feet, thence east 210 feet, thence south 45 feet, thence west 30 feet, thence north 30 feet, thence west 143.25 feet, thence south 275 feet, thence west 19.34 feet, thence southeasterly 107.19 feet to a point 10.21 feet east of the Point of Beginning, thence 10.21 feet west to the Point of Beginning, AND commencing at the northeast corner of the City Property, thence 20 feet west and 158.31 feet south to a Point of Beginning, thence south 50 feet, thence west 30 feet, thence north 50 feet, thence east 30 feet to the Point of Beginning.

(ALSO SEE ATTACHED SITE PLAN 27-1)



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Drews

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Davis

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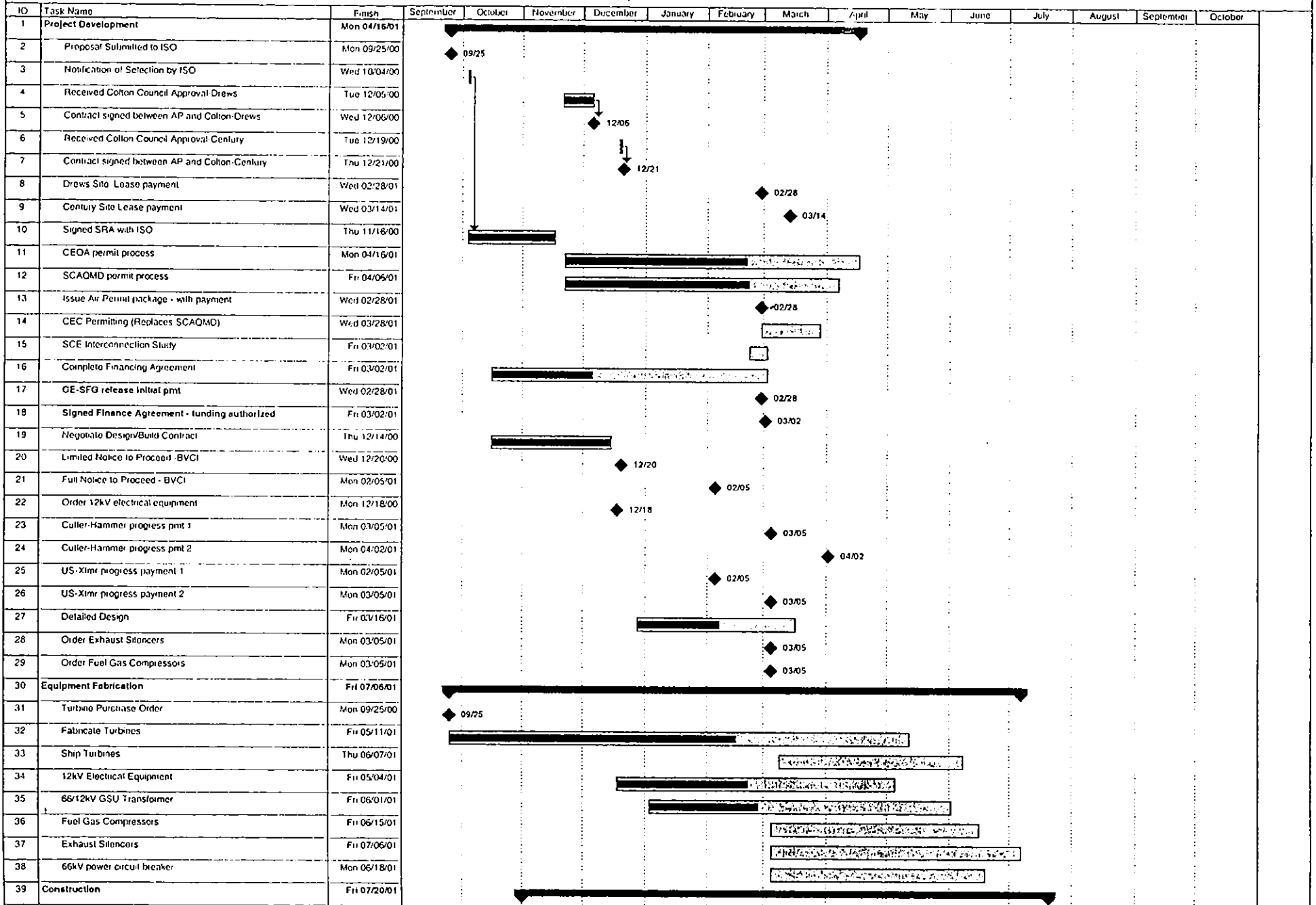
(ALSO SEE ATTACHED SITE PLAN 27-1)

ATTACHMENT H

CONSTRUCTION SCHEDULE

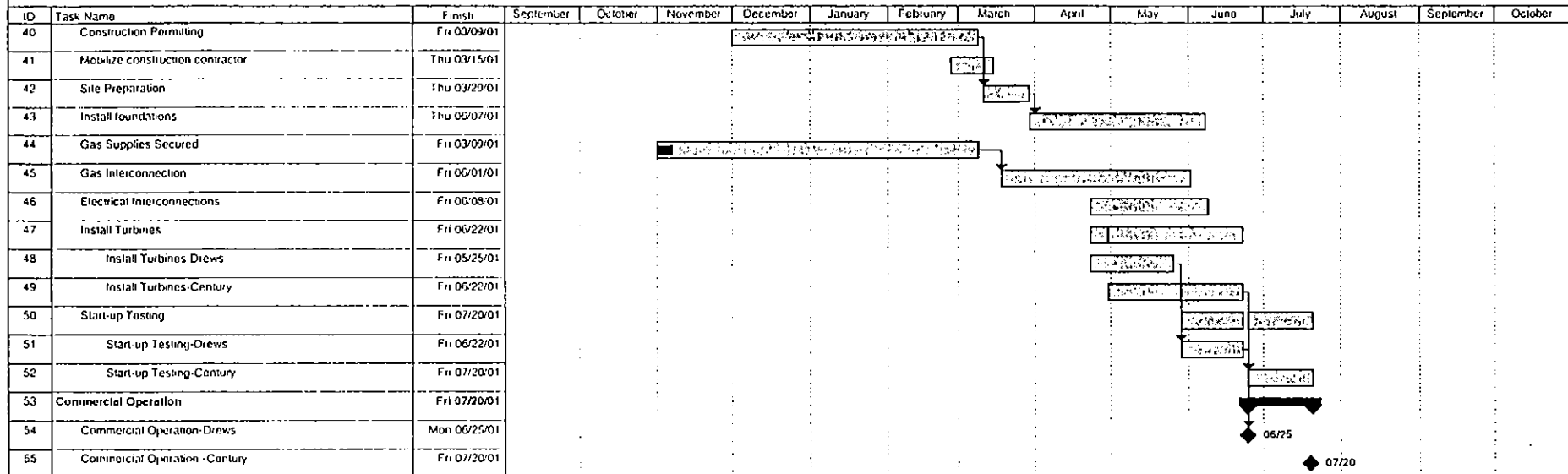
California Department of Water Resources

Project Schedule



California Department of Water Resources

Project Schedule



ATTACHMENT I

SCAQMD PERMIT APPLICATION

**PERMIT APPLICATION REPORT FOR
FOUR 10.5MW SIMPLE CYCLE TURBINES AT
DREWS SUBSTATION**

PREPARED FOR:

Alliance Power, Inc.
13934 Eberle Road
Bakersfield, California 93313

FOR SUBMITTAL TO:

South Coast Air Quality Management District
21865 East Copley Drive
Diamond Bar, California 91765

PREPARED BY:

SCEC

Air Quality Specialists
1582-1 N. Batavia Street
Orange, California 92867
(714) 282-8240

March, 2001

ALLIANCE POWER INC
OPERATING ACCOUNT
7950 S LINCOLN ST STE 114 303-730-2328
LITTLETON, CO 80122

US BANK
24-HOUR BANKING
1-303-585-8585

10299

23-2 164
1020

3/6/2001

PAY TO THE
ORDER OF

South Coast Air Quality Management Distri

\$ **11,361.70

Eleven Thousand Three Hundred Sixty-One and 70/100*****

DOLLARS

South Coast Air Quality Management Distri
21865 E. Copley Drive
Diamond Bar, CA 91765

MEMO

Permit Processing Fee - Drews Substation

⑈010299⑈ ⑆102000021⑆103656527456⑈

ALLIANCE POWER INC

South Coast Air Quality Management Distri
03/06/2001 Bill #Drews Subst

3/6/2001

10299

11,361.70

US Bank Operating- Permit Processing Fee - Drews Substation

11,361.70

Security features included. Details on back.

TABLE OF CONTENTS

SECTION	PAGE
1.0 INTRODUCTION.....	1
1.1 General Introduction	1
1.2 Project Summary.....	1
1.3 Technical Project Contacts	2
2.0 FACILITY AND EQUIPMENT INFORMATION	3
2.1 Facility Description	3
2.2 Equipment Description.....	3
3.0 EMISSIONS INFORMATION.....	5
3.1 Criteria Pollutant Emissions Summary	5
3.2 Toxic Pollutant Emissions Summary.....	5
4.0 AIR QUALITY IMPACT ANALYSIS AND SCREENING RISK ASSESSMENT	9
4.1 Ambient Air Quality Impact Analysis.....	9
4.2 Screening Risk Assessment	9
5.0 REGULATORY INFORMATION	13
5.1 SCAQMD Regulatory Analysis	13
6.0 PROPOSED PERMIT LANGUAGE.....	16
6.1 Proposed Permit Conditions	16

LIST OF APPENDICIES

APPENDIX A	SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT APPLICATION FOR PERMIT TO CONSTRUCT FORMS (COPIES)
APPENDIX B	FACILITY LOCATION MAPS AND DIAGRAMS
APPENDIX C	EQUIPMENT INFORMATION
APPENDIX D	CRITERIA AND TOXIC POLLUTANT EMISSIONS INFORMATION
APPENDIX E	AMBIENT AIR QUALITY IMPACT ANALYSIS AND SCREENING RISK ASSESSMENT INFORMATION

SECTION 1.0

INTRODUCTION

1.1 General Introduction

Alliance Colton LLC (Alliance) is submitting permit applications to construct and operate four simple cycle 10.5 MW turbines. The proposed facility is located at 559 S. Pepper Ave in the City of Colton. Construction of the project is to begin as soon as possible in order for the turbines to be operational by July 1, 2001. Alliance requests, therefore, that SCAQMD take steps to expedite processing of the applications. The permit applications have been prepared with assistance from SCEC and are being submitted in conjunction with applications to the California Energy Commission (CEC) under the 21-day emergency siting process.

1.2 Project Summary

The Drews substation project is one of two projects proposed by Alliance in the City of Colton. The properties are owned by the City of Colton and will be leased to Alliance for the purpose of generating electricity. Alliance will be generating power under agreement with the California Independent System Operator (ISO). ISO and the California Energy Commission have determined that the region surrounding Colton will be vulnerable to power interruptions because the infrastructure to transport electricity from outside the region is not adequate to meet local power demands. Local generation capability in the region is, therefore, required to serve local electricity users. The proposed facilities are critical to power availability in the region both in terms of the amount of electricity generated and in the ability to distribute power to the local population.

The proposed facility will be constructed and operated in two phases. The first phase will commence on July 1, 2001. During the first phase, Alliance proposes to operate the turbines with dry low-emission combustion technology capable of meeting NO_x levels of 25 PPMV. CO emissions will be limited to 20 ppmv. The facility will qualify as a RECLAIM NO_x facility, but not a Title V facility. Alliance will install RECLAIM-compliant CEMs or parametric monitoring systems to quantify and report mass NO_x emission rates. Until such installations are complete, the units will be subject to RECLAIM protocol for process units.

The second phase will commence upon installation of Catalytica Combustion Systems (Catalytica) Xonon technology or an alternative technology deemed to meet BACT for prime power units. Catalytica has committed to provide Alliance with its final delivery schedule of retrofit packages for the turbines by September 30, 2001. Catalytica, General Electric and Alliance anticipate being able to begin installing Xonon in July of 2002, with final installation to be complete by February 1, 2003. The ISO – Alliance contract allows Alliance to install during the summer of 2002, if the retrofit systems are available for installation prior to November of 2002. If Catalytica cannot commit to install Xonon within a reasonable period, Alliance will proceed to purchase and

install selective catalytic reduction and CO oxidation systems to meet BACT under phase two of the project.

During phase two of the project, potential operations will increase only to the point that the facility will remain a minor source, with respect to Title V, and to the point that emission offsets for pollutants other than NO_x can be avoided. Catalytica, General Electric and Alliance anticipate that Xonon will meet NO_x levels of approximately 5 ppmv and CO emissions of 10 ppmv. General Electric has not provided emission rate guarantees for PM₁₀. EPA AP-42 emission factors for PM₁₀ indicate maximum annual operations of 2,500 hours before the facility's annual potential emissions would reach four tons. These factors, however, reflect the use of water / steam injection, rather than dry combustion technology and likely overstate potential emissions from the facility. Final permitted annual operating hours will be determined based upon initial source tests to determine actual PM₁₀ emission rates.

1.3 Technical Project Contacts

Brian O' Neill, Vice President
Alliance Power, Inc.
13934 Eberle Rd.
Bakersfield, CA 93313

Phone: (661) 836-9873
Fax: (661) 836-9853

Karl Lany
SCEC
1582-1 N. Batavia St.
Orange, CA 92867

Phone: (714) 282-8240
Fax: (714) 282-8247

SECTION 2.0

FACILITY AND EQUIPMENT INFORMATION

2.1 Facility Description

The Drews Substation is owned and operated by the publicly owned City of Colton utility. The city is leasing the property to Alliance, specifically for the purpose of generating power. On February 5, 2001, the City issued its finding that the proposed project is a tenant improvement and has deemed that a CEQA negative declaration is not required. The facility is located in an area of the City of Colton that is characterized by light industrial and rural land uses. Because applications are being submitted with CEC, the CEC environmental impact assessment will serve as a substitute for the CEQA process. Appendix B contains facility maps, plot plans and the City's CEQA determination.

Alliance Colton LLC
Drews Substation
559 South Pepper Avenue
Colton, California

2.2 Equipment Description

Alliance is proposing to construct four General Electric Model 10B1 gas turbines, rated at 10.5 MW. Table 2-1 contains specifications for the units. Additional equipment information is contained in Appendix C.

**Table 2-1
Equipment Summary
10.5 MW Gas Turbine
Drews Substation**

Specification	Description
Manufacturer:	General Electric
Model:	10B1
Rating:	10.5 MW
Fuel :	Pipeline Natural Gas
Fuel Consumption:	123,000 cf/hr
Exhaust Flow:	72,904 DSCFM, 199,537 ACFM
Stack Height:	45 ft.
Stack Diameter:	9 ft. x 7 ft.

SECTION 3.0

EMISSIONS INFORMATION

3.1 Criteria Pollutant Emissions Summary

Phase 1 estimated criteria pollutant emissions are summarized in Table 3-1 for each unit, and Table 3-2 for the entire facility. Phase 1 NO_x and CO emission factors were provided by General Electric and reflect anticipated achievable emission rates using dry combustion technology. ROG, PM₁₀, and SO_x emission factors were derived from EPA AP-42, dated April 2000. A maximum operating schedule of 24 hours per day, 30 days per month, and 525 hours per year at 100% rated capacity was used for all maximum calculations. Average operations reflect 5 hours per day, 20 days per month, and 423 hours per year. Additional emissions information for Phase 1 is included in Appendix D.

Total potential Daily NO_x emissions for the Facility are 283 pounds and total potential annual emissions for the facility are 9.9 tons. Potential NO_x emissions indicate that the Facility will be classified as a RECLAIM facility, but not as a Title V facility during Phase 1 of the project.

Phase 2 estimated criteria pollutant emissions are summarized in Table 3-3 for each unit, and Table 3-4 for the entire facility. Phase 2 NO_x and CO emission factors were provided by General Electric and reflect anticipated achievable emission rates using Xonon combustion technology. ROG, PM₁₀, and SO_x emission factors were derived from EPA AP-42, dated April 2000. A maximum operating schedule of 24 hours per day, 30 days per month, and approximately 2,500 to 3,900 hours per year at 100% rated capacity was used for all maximum calculations. Annual operating hours are dependent upon PM₁₀ emission factors and will be specified upon initial sources tests. Projected Xonon emission rates, AP-42 emission rates and emission calculation spreadsheets for Phase 2 of the project are included in Appendix D.

3.2 Toxic Pollutant Emissions Summary

Toxic pollutant emissions from the proposed project were derived from factors provided by SCAQMD for natural gas fired combustion turbines. Table 3-5 provides a summary of the factors and emission estimates. Additional toxic emissions information can be found in Appendix D.

Table 3-1
Phase 1
Criteria Pollutant Emissions Summary
One Gas Turbine
Drews Substation

	U-EF lb./MMBtu	C-EF lb./MMBtu	AHU lbs./hr	AHC Lbs./hr	MHU lbs./hr	MHC lbs./hr	MDU lbs./day	MDC lbs./day	AA Lbs./yr.	APTE tons/yr.	30DA lbs./day
ROG	0.0030	0.0030	0.33	0.33	0.35	0.35	8.4	8.4	140	0.07	8.4
UNROG	0.0089	0.0089	0.98	0.98	1.04	1.04	0.0	24.8	416	0.22	24.8
SOx	0.0034	0.0034	0.38	0.38	0.40	0.40	9.5	9.5	159	0.08	9.5
CO	0.0495	0.0495	5.47	5.47	5.76	5.76	138.2	138.2	2313	1.22	138.2
PM10	0.0066	0.0066	0.73	0.73	0.77	0.77	18.4	18.4	308	0.16	18.4
NOx	0.1016	0.1016	11.22	11.22	11.81	11.81	283.5	283.5	4747	2.50	283.5

Table 3-2
Phase 1
Criteria Pollutant Emissions Summary
Entire Facility
Drews Substation

	U-EF lb./MMBtu	C-EF lb./MMBtu	AHU lbs./hr	AHC Lbs./hr	MHU lbs./hr	MHC lbs./hr	MDU lbs./day	MDC lbs./day	AA Lbs./yr.	APTE tons/yr.	30DA lbs./day
ROG	0.0030	0.0030	1.33	1.33	1.40	1.40	33.5	33.5	561	0.30	33.5
UNROG	0.0089	0.0089	3.93	3.93	4.14	4.14	0.0	99.4	1664	0.88	99.4
SOx	0.0034	0.0034	1.50	1.50	1.58	1.58	38.0	38.0	636	0.33	38.0
CO	0.0495	0.0495	21.88	21.88	23.03	23.03	552.7	552.7	9254	4.87	552.7
PM10	0.0066	0.0066	2.92	2.92	3.07	3.07	73.7	73.7	1234	0.65	73.7
NOx	0.1016	0.1016	44.89	44.89	47.25	47.25	1134.0	1134.0	18987	9.99	1134.0

Table 3-3
Phase 2
Criteria Pollutant Emissions Summary
One Gas Turbine
Drews Substation

	U-EF lb./MMBtu	C-EF lb./MMBtu	AHU lbs./hr	AHC Lbs./hr	MHU lbs./hr	MHC lbs./hr	MDU lbs./day	MDC lbs./day	AA Lbs./yr.	APTE tons/yr.	30DA lbs./day
ROG	0.0030	0.0030	0.3315	0.3315	0.3489	0.3489	8.4	8.4	592	0.31	8.4
UNROG	0.0089	0.0089	0.98	0.98	1.04	1.04	0.0	24.8	1755	0.92	24.8
SO_x	0.0034	0.0034	0.3756	0.3756	0.3954	0.3954	9.5	9.5	671	0.35	9.5
CO	0.0248	0.0248	2.7400	2.7400	2.8842	2.8842	69.2	69.2	4891	2.57	69.2
PM₁₀	0.0066	0.0066	0.7292	0.7292	0.7676	0.7676	18.4	18.4	1302	0.69	18.4
NO_x	0.0240	0.0240	2.6557	2.6557	2.796	2.796	67.1	67.1	4740	2.49	67.1

* Based upon annual operating limits to be determined after source tests are conducted.

Table 3-4
Phase 2
Criteria Pollutant Emissions Summary
Entire Facility
Drews Substation

	U-EF lb./MMBtu	C-EF lb./MMBtu	AHU lbs./hr	AHC lbs./hr	MHU lbs./hr	MHC lbs./hr	MDU lbs./day	MDC lbs./day	AA Lbs./yr.	APTE tons/yr.	30DA lbs./day
ROG	0.0030	0.0030	1.33	1.33	1.40	1.40	33.5	33.5	2367	1.25	33.5
UNROG	0.0089	0.0089	3.93	3.93	4.14	4.14	0.0	99.4	7021	3.70	99.4
SO_x	0.0034	0.0034	1.50	1.50	1.58	1.58	38.0	38.0	2682	1.41	38.0
CO	0.0248	0.0248	10.96	10.96	11.54	11.54	276.9	276.9	19564	10.30	276.9
PM₁₀	0.0066	0.0066	2.92	2.92	3.07	3.07	73.7	73.7	5206	2.74	73.7
NO_x	0.0240	0.0240	10.62	10.62	11.18	11.18	268.4	268.4	18962	9.98	268.4

* Based upon annual operating limits to be determined after source tests are conducted.

**Table 3-5
Toxic Pollutant Emissions Summary
Drews Substation**

Compound	Turbine Emission Factor		Turbine Emissions	
	(lb./MMcf)	(lb./hr)	(lb./yr.)	(tons/yr.)
Acetaldehyde	0.037	0.00410	35.90	0.01795
Acrolein	0.009	0.00100	8.73	0.00437
Benzene	0.011	0.00125	10.96	0.00548
Formaldehyde	0.094	0.01041	91.21	0.04560
PAH'S **	0.001	0.0001	0.97	0.00049
Toluene	0.073	0.00804	70.44	0.03522
Xylene	0.030	0.00330	28.91	0.01446

Notes:

1. Emission factors provided by SCAQMD.

SECTION 4.0

AIR QUALITY IMPACT ANALYSIS AND SCREENING RISK ASSESSMENT

4.1 Ambient Air Quality Impact Analysis

An ambient air quality impact analysis (AQIA) was conducted in accordance with SCAQMD Rule 1303. The purpose of the AQIA is to assist in determining if the proposed turbines will result in an unacceptable level of emission concentrations in the area surrounding the project site. NO₂ and CO are typically the pollutants of greatest concern for natural-gas combustion projects.

SCEC completed a mid-tier AQIA for the project using the ISCST3 computer model. The model was set up with flat terrain grid extending 5000 meters from the project site and operated with normalized emission rates of 1.0 gram per second. Actual meteorological data from the Redlands weather station was used and the model was executed using non-regulatory default options. In addition, no significant buildings were located on-site, so building induced down wash and wake effects were not factors.

The results of the air dispersion modeling indicate that impacts are within the SCAQMD significance levels for air quality impacts. The results of the AQIA are summarized below in Table 4-1 and 4-2. Table 4-1 provides the summary based upon 500 operating hours per year. Table 4-2 provides a summary based upon 8760 operating hours per year with additional NO_x and CO emission reductions. Additional modeling information can be found in Appendix E.

4.2 Screening Risk Assessment

A tier 3 screening risk assessment was conducted in accordance with SCAQMD 1401 to evaluate the project's potential cancer, chronic and acute health risks. The assessment included the use of ISCST3 to determine down-wind pollutant concentrations. These concentrations were then used with SCAQMD calculation methodologies to determine health risks.

The results of the screening risk assessment indicate that the proposed project meets the standards set forth in SCAQMD Rule 1401 for cancer, chronic, and acute health risks. The results of the assessment are summarized in Table 4-3. Additional risk assessment information can be found in Appendix E.

Table 4-1
Summary of Air Quality Impact Analysis
Phase 1 - 500 Operating Hours/Year
Drews Substation

Pollutant	Averaging Time	Emission Rate (lbs./hr)	Maximum Impact ($\mu\text{g}/\text{m}^3$)	SCAQMD / NSR
				Allowable Significant Change ($\mu\text{g}/\text{m}^3$)
NO _x	1 – Hour	11.8	7.2	20.0
NO _x	Annual (500 hours)	8.4	0.01	1.0
CO	1 – Hour	7.0	4.3	1100.0
CO	8 – Hour	7.0	2.8	500.0
PM	24 – Hour	0.8	0.1	2.5
PM ₁₀	Annual (500 hours)	0.8	0.001	1.0

Notes:

1. NO_x annual (500 hours) emission average reflects 25 ppmv and the 0.71 NO_x to NO₂ conversion factor.

Table 4-2
Summary of Air Quality Impact Analysis
Phase 2 - 8760 Operating Hours/Year
Drews Substation

Pollutant	Averaging Time	4 GTs Cumulative Emission Rate (lbs./hr)	4 GTs Cumulative Maximum Impact ($\mu\text{g}/\text{m}^3$)	SCAQMD / NSR
				Allowable Significant Change ($\mu\text{g}/\text{m}^3$)
NO _x	1 – Hour	2.4	1.47	20.0
NO _x	Annual (8760 hours)	1.7	0.13	1.0
CO	1 – Hour	7.0	4.3	1100.0
CO	8 – Hour	7.0	3.4	500.0
PM	24 – Hour	0.8	0.2	2.5
PM ₁₀	Annual (8760 hours)	0.8	0.06	1.0

Notes:

1. NO_x annual (8760 hours) emission average reflects 5 ppmv and the 0.71 NO_x to NO₂ conversion factor.

Table 4-3
Summary of Screening Risk Assessment
Drews Substation – 8760 Hours/Year

Compound	MICR Summary		HIC Summary		HIA Summary	
	Unit Risk Factor	MICR	REL Factor	HIC	REL Factor	HIA
Acetaldehyde	2.70E-06	8.27E-10	9.00E+00	0.00003	n/a	n/a
Acrolein	n/a	n/a	n/a	n/a	1.90E-02	0.03220
Benzene	2.90E-05	2.71E-09	6.00E+00	0.000016	1.30E+03	0.00000
Formaldehyde	6.00E-06	4.67E-09	3.00E+00	0.000259	9.40E-02	0.06798
PAH'S *	1.70E-03	1.79E-07	n/a	n/a	n/a	n/a
Toluene	n/a	n/a	3.00E+02	0.000002	3.70E+04	0.00000
Xylene	n/a	n/a	7.00E+02	0.000000	2.20E+04	0.00000
	Total MICR	1.87E-07	Total HIC	0.00031	Total HIA	0.10018

SECTION 5.0

REGULATORY INFORMATION

5.1 SCAQMD Regulatory Analysis

The following is a discussion of compliance issues and applicable SCAQMD Rules and Regulations.

Regulation II

Rule 212: Standards for Approving Permits:

This equipment is not located within 1000 feet of a school, but the proposed facility will have potential NO_x emissions during its first two years of operation that are in excess of the levels specified in Rule 212 (g). Alliance requests that any public notification regarding the proposed project be made as soon as possible to ensure swift permit processing.

Regulation IV

Rule 401: Visible Emissions:

The opacity limits established in Rule 401 are not expected to be exceeded since the equipment will be fired on natural gas. Compliance with Rule 401 is expected.

Rule 402: Nuisance:

Based upon experience with similar equipment, operation of this system is not expected to emit air contaminants so as to cause a nuisance. Compliance with Rule 402 is expected.

Rule 431.1 Sulfur Content of Gaseous Fuels:

The equipment proposed for this project will be fired on pipeline quality natural gas. Compliance with Rule 431.1 is expected.

Regulation IX

Subpart GG – Standards of Performance for Stationary Gas Turbines:

Based upon performance characteristics for the turbine model, the maximum NO_x concentration allowable under Subpart GG is 0.0235% of exhaust volume at 15% O₂. The turbines are expected to emit NO_x at a rate of less than 0.0025% of exhaust volume at 15% O₂. Compliance with Subpart GG is expected.

Regulation XI

Rule 1134: Emissions of Oxides of Nitrogen from Stationary Gas Turbines

New turbines and RECLAIM sources are exempt from Rule 1134.

Regulation XIII

Rule 1303 and Rule 2005: Best Available Control Technology (BACT):

Achieved in practice BACT for simple cycle prime power gas turbines generally consists of 5 ppmv for NO_x and 10 ppmv for CO. Catalytica Xonon is generally capable of meeting these BACT levels and will be available for installation prior to any operation of the turbines in the year 2003.

In the interim period, Alliance will operate the turbines with General Electric's dry combustion technology, capable of meeting 25 ppmv NO_x and 20 ppmv CO. At this time, these levels are generally considered to be the lowest achievable emission rates achievable without the use of add-on emission control systems. It should be noted that any add-on control systems that could normally be installed on the turbines, whether Xonon or SCR, cannot be delivered prior to the 2001 operating season.

SCAQMD BACT guidelines specify clean fuel policy as BACT for emergency turbines. The proposed phase one project will operate under severe permit restrictions, much in the same manner as an emergency turbine would. Unlike typical emergency turbines, however, operations under phase one of the project would be subject to a sunset date in the permit that would limit project duration. Sections A and C of SCAQMD BACT policy specify that SCAQMD can make less stringent BACT determinations based upon project operation hours and upon project duration. The proposed operating hour limits, the limited duration of Phase 1 of the project, and the environmental and social implications of power outages that can be prevented warrant an interim BACT determination that favors dry combustion technology with NO_x at 25 ppmv.

Rule 1303 and Rule 2005: Modeling:

Modeling as required by SCAQMD Rules 1303 and 2005 was performed to demonstrate no unacceptable increase in ambient NO₂, CO and PM emission concentrations. Detailed information regarding the modeling for this project can be found in Section 4.0 and Appendix E of this report.

Rule 1303 and Rule 2005: Emission Offsets:

The estimated maximum annual emissions from the proposed equipment, combined with limits upon annual operating hours will be below the emission offsets threshold stipulated in Rule 1303(b)(2). Offsets for CO, ROG, SO_x and PM₁₀ will not be required.

Total facility NO_x emissions are expected to exceed four tons per year. RECLAIM RTCs will be secured for the first year of operations prior to start-up. Alliance also coordinate with CARB to

obtain emission offset credits through the emergency offset bank and will supplement with credits obtained through the private market.

Regulation XIV

Rule 1401: New Source Review of Toxic Air Contaminants:

As required in SCAQMD Rule 1401, a Tier III Risk Assessment was performed to demonstrate compliance with Rule 1401(d). Detailed information regarding the risk assessment for this project can be found in Section 4.0 and Appendix E of this report.

SECTION 6.0

PROPOSED PERMIT LANGUAGE

6.1 Proposed Permit Conditions

1. On or before October 31, 2001, operator shall notify district of selected emission control technology capable of meeting BACT achieved in practice standards for prime power units. Operator shall also submit to the district an implementation plan and supporting documentation to demonstrate the viability of the selected technology.
2. Prior to the installation of emission control equipment, turbine operations will be subject to the following restrictions:
 - a. Operation of turbines at this facility shall not result in NO_x emission levels in excess of 10 tons per year, measured in accordance with RECLAIM protocol for process units using a concentration limit of 25 ppmv or through the use of a RECLAIM-compliant CEMs or parametric monitoring system.
 - b. Operation of this turbine without the installation of NO_x and CO emission reduction technology shall cease on February 1, 2003.
3. Once emission reduction technology is installed, turbine operations shall be subject to the following restrictions:
 - a. Operation of turbines at this facility shall not result in NO_x emission levels in excess of 10 tons per year, measured in accordance with RECLAIM protocol for process units using a concentration limit of 5 ppmv or through the use of a RECLAIM-compliant CEMs or parametric monitoring system.

APPENDIX A

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT PERMIT TO CONSTRUCT APPLICATION FORMS (COPIES)

- **(1) FORM XPP**
- **(4) FORM 400-A**
- **(4) FORM 400-E-12**
- **(1) FORM CEQA**



South Coast Air Quality Management District
P. O. Box 4944
Diamond Bar, CA 91765
(909) 396-2000

Form 400-A must accompany all submittals.

FORM 400 - XPP (Drews Substation)

COPY

Section I - Facility/Application Information

1. Business Name: **ALLIANCE COLTON, LLC.**

Facility ID:

2. The requested application is for a(n): Date of Occurrence: 2/15/01

- a. ☒ New Construction
- b. ☐ Change of Location
- c. ☐ Modification of Equipment/Process
- d. ☐ Existing Equipment with Expired Permit
- e. ☐ Existing Equipment Operating without a Permit; Initial Operation Date:
- f. ☐ Change of Condition(s); Specify the change of condition(s) requested:
- g. ☐ Change of Operator; List previous name of operator and Facility ID #:

Equipment Description: **GAS TURBINE, <50MW (4 UNITS)**

Application No.:

3. I hereby request Express Permit Processing for this application.

4. I understand that this request will incur additional fees.

5. This request is not cancelable once engineering review has been initiated.

6. Express Permit Processing neither guarantees action by any specific date nor does it guarantee permit approval.

Section II - Applicant Certification Statement

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.

SIGNATURE OF RESPONSIBLE OFFICIAL OF FIRM:

TITLE OF RESPONSIBLE OFFICIAL OF FIRM:

TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL OF FIRM:

BRIAN O'NEILL

RESPONSIBLE OFFICIAL'S TELEPHONE NUMBER

(661) 836-9873

DATE SIGNED:

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.

SIGNATURE OF PREPARER:

TITLE OF PREPARER:

V.P. Scec

TYPE OR PRINT NAME OF PREPARER:

KARL A. LANY

PREPARER'S TELEPHONE NUMBER

(714) 282-8240

DATE SIGNED:

AQMD USE ONLY	APPLICATION/TRACKING #	PROJECT #	TYPE B C D	EQUIPMENT CATEGORY CODE: /	FEE SCHEDULE: \$	VALIDATION
	ENG. A R DATE	ENG. A R DATE	CLASS I III IV	ASSIGNMENT UNIT ENGINEER	ENF. SECT.	CHECK/MONEY ORDER AMOUNT # \$

FORM 400 XPP, Rev. 08/98

AQMD USE ONLY	APPLICATION/TRACKING #	PROJECT #	TYPE B C D	EQUIPMENT CATEGORY CODE: /	FEE SCHEDULE: \$	VALIDATION
	ENG. A R DATE	ENG. A R DATE	CLASS I III IV	ASSIGNMENT UNIT ENGINEER	ENF. SECT.	CHECK/MONEY ORDER AMOUNT # \$

FORM 400 E - 13, Rev. 10/97



South Coast Air Quality Management District
P. O. Box 4944
Diamond Bar, CA 91765
(909) 396-2000

**APPLICATION FOR PERMIT TO CONSTRUCT
AND PERMIT TO OPERATE
FORM 400 - A (Draws - GT No.1)**

COPY

Non-Title V Facilities: This form must be accompanied by one or more 400-E-xx series form(s). Complete this side of form only.

Title V Facilities: Complete both sides of this form. Include additional forms as necessary.

NC/NOV NUMBER:

INSPECTOR

SECTOR

ISSUE DATE

Section I - Company Information

LEGAL NAME OF OPERATOR:

ALLIANCE COLTON, LLC.

☐ IRS OR ☐ S. S. NUMBER

PERMIT TO BE ISSUED TO (SEE INSTRUCTIONS):

ALLIANCE COLTON, LLC.

BUSINESS MAILING ADDRESS:

7950 S. LINCOLN ST. SUITE 114, LITTLETON, CO 80122

PERMIT MAILING ADDRESS, IF DIFFERENT FROM BUSINESS MAILING ADDRESS:

TYPE OF ORGANIZATION

☒ Corporation

☐ Individual

☐ Limited Partnership

☐ General Partnership

☐ Government Entity

☐ Other (Fill in):

ARE YOU A SMALL BUSINESS?

(SEE INSTRUCTIONS)

☐ Yes

☒ No

AVERAGE ANNUAL GROSS RECEIPTS \$

NUMBER OF EMPLOYEES:

IS YOUR BUSINESS 51 % OR MORE

WOMAN/MINORITY OWNED? ☐

Yes

☒ No

THIS SECTION IS REQUIRED FOR ALL APPLICATIONS FOR NEW CONSTRUCTION OR MAJOR MODIFICATIONS.

ARE ALL MAJOR SOURCES UNDER SAME OWNERSHIP IN CALIFORNIA IN COMPLIANCE WITH

FEDERAL, STATE, AND LOCAL AIR POLLUTION CONTROL RULES?

☒ Yes

☐ No

ARE YOU THE OWNER OF THE EQUIPMENT UNDER THIS APPLICATION?

☒ Yes

☐ No

☐ IRS OR ☐ S. S. NUMBER OF OWNER

IF NO, ENTER THE LEGAL NAME OF OWNER

Section II - Facility Information

EQUIPMENT ADDRESS/LOCATION:

559 S. PEPPER AVE., COLTON, CA

FACILITY NAME:

ALLIANCE COLTON - DREWS SUBSTATION

FACILITY ID NUMBER:

PRINT NAME OF CONTACT PERSON:

BRIAN O' NEILL

TITLE OF CONTACT PERSON:

VICE PRESIDENT

TYPE OF BUSINESS AT THIS FACILITY:

POWER GENERATION

PRIMARY SIC CODE FOR THIS

FACILITY: 4911

NUMBER OF EMPLOYEES AT THIS FACILITY

CONTACT PERSON'S PHONE NUMBER:

(661) 836-9873

CONTACT PERSON'S FAX NUMBER:

(661) 836-98535647

CONTACT PERSON'S E-MAIL ADDRESS:

BRIAN-ONEILL@ALLIANCEPOWER.COM

Section III - Application Type

DESCRIPTION OF EQUIPMENT: GAS TURBINE NO.1, 10.5 MW

PREVIOUS PERMIT (S): NONE

APPLICATION FOR (SEE INSTRUCTIONS):

☒ NEW CONSTRUCTION

☐ MODIFICATION

☐ CHANGE OF LOCATION

ARE YOU SUBMITTING MULTIPLE APPLICATIONS FOR

☐ EXISTING EQUIPMENT WITHOUT PERMIT

☐ CHANGE OF PERMITTEE

☐ CHANGE OF PERMIT CONDITION

EQUIPMENT IDENTICAL TO THAT DESCRIBED ABOVE?

☐ EXISTING EQUIPMENT WITH EXPIRED PERMIT

☒ Yes

☐ No

☒ **APPLICATION FOR NON-TITLE V EQUIPMENT PERMIT. CHECK THE SUPPLEMENTAL SERIES 400-E-xx FORM(S) SUBMITTED WITH THIS 400-A FORM:**

☐ 400-E-1 • PARTICULATE MATTER (PM₁₀) CONTROL EQUIPMENT

☐ 400-E-2 • VOLATILE ORGANIC COMPOUND (VOC) CONTROL EQUIPMENT

☐ 400-E-3 • SCRUBBER

☐ 400-E-4 • ABRASIVE BLASTING EQUIPMENT

☐ 400-E-5 • DEGREASER

☐ 400-E-6 • DRY CLEANING EQUIPMENT

☐ 400-E-7 • ETHYLENE OXIDE STERILIZER

☐ 400-E-8 • EXTERNAL COMBUSTION EQUIPMENT

☐ 400-E-9 • FOOD BROILER/FRYER

☐ 400-E-10 • FUEL DISPENSING AND STORAGE EQUIPMENT

☒ 400-E-11 • GAS TURBINE

☐ 400-E-12 • INTERNAL COMBUSTION EQUIPMENT

☐ 400-E-13 • OPEN PROCESS TANK

☐ 400-E-14 • OPEN PROCESS TANK; PROCESS LINE

☐ 400-E-15 • PRINTING EQUIPMENT

☐ 400-E-16 • SOLID MATERIALS STORAGE EQUIPMENT

☐ 400-E-17 • SPRAY BOOTH/OPEN SPRAY

☐ 400-E-17a • POWDER SPRAY BOOTH

☐ 400-E-18 • STORAGE TANK (LIQUID & GASEOUS MAT'L)

☐ 400-E-19 • WAVE SOLDER MACHINE

☐ 400-E-20 • ASBESTOS REMOVAL EQUIPMENT

☐ 400-XPP • ADDITIONAL INFORMATION SUBMITTED

☐ **APPLICATION FOR TITLE V FACILITY PERMIT. PROVIDE INFORMATION REQUESTED ON REVERSE SIDE OF THIS FORM.**

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.

SIGNATURE OF RESPONSIBLE OFFICIAL OF FIRM:

TITLE OF RESPONSIBLE OFFICIAL OF FIRM:

TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL OF FIRM:

BRIAN O'NEILL

RESPONSIBLE OFFICIAL'S PHONE NUMBER

(661) 836-9873

DATE SIGNED:

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.

SIGNATURE OF PREPARER, IF PREPARED BY PERSON OTHER THAN RESPONSIBLE OFFICIAL OF FIRM: TITLE OF PREPARER:

VICE PRESIDENT

TYPE OR PRINT NAME OF PREPARER:

KARL LANY, SCEC

PREPARER'S TELEPHONE NUMBER

(714) 282-8240

DATE SIGNED:

TITLE V FACILITIES ONLY: COMPLETE OTHER SIDE

AQMD USE ONLY	APPLICATION/TRACKING #	PROJECT #	TYPE B C D	EQUIPMENT CATEGORY CODE: _____/____	FEE SCHEDULE: \$	VALIDATION
ENG. A R	ENG. A R	CLASS	ASSIGNMENT	ENF.	CHECK/MONEY ORDER	AMOUNT
DATE	DATE	I III IV	UNIT	ENGINEER	#	\$



South Coast Air Quality Management District
P. O. Box 4944
Diamond Bar, CA 91765
(909) 396-2000

APPLICATION FOR PERMIT TO CONSTRUCT AND PERMIT TO OPERATE FORM 400 - A (Draws - GT No.2)

COPY

Non-Title V Facilities: This form must be accompanied by one or more 400-E-xx series form(s). Complete this side of form only.

Title V Facilities: Complete both sides of this form. Include additional forms as necessary.

NC/NOV NUMBER:

INSPECTOR

SECTOR

ISSUE DATE

Section I - Company Information

LEGAL NAME OF OPERATOR:

ALLIANCE COLTON LLC

☐ IRS OR ☐ S. S. NUMBER

PERMIT TO BE ISSUED TO (SEE INSTRUCTIONS):

ALLIANCE COLTON LLC

BUSINESS MAILING ADDRESS:

7950 S. LINCOLN ST. SUITE 114, LITTLETON, CO 80122

PERMIT MAILING ADDRESS, IF DIFFERENT FROM BUSINESS MAILING ADDRESS:

TYPE OF ORGANIZATION

☒ Corporation

☐ Individual

☐ Limited Partnership

☐ General Partnership

☐ Government Entity

☐ Other (Fill in):

ARE YOU A SMALL BUSINESS?
(SEE INSTRUCTIONS)

☐ Yes

☒ No

AVERAGE ANNUAL GROSS RECEIPTS \$

NUMBER OF EMPLOYEES:

IS YOUR BUSINESS 51 % OR MORE
WOMAN/MINORITY OWNED? ☐

Yes ☒ No

THIS SECTION IS REQUIRED FOR ALL APPLICATIONS FOR NEW CONSTRUCTION OR MAJOR MODIFICATIONS.

ARE ALL MAJOR SOURCES UNDER SAME OWNERSHIP IN CALIFORNIA IN COMPLIANCE WITH
FEDERAL, STATE, AND LOCAL AIR POLLUTION CONTROL RULES? ☒ Yes ☐ No

ARE YOU THE OWNER OF THE EQUIPMENT UNDER THIS APPLICATION? ☒ Yes ☐ No

☐ IRS OR ☐ S. S. NUMBER OF OWNER

IF NO, ENTER THE LEGAL NAME OF OWNER

Section II - Facility Information

EQUIPMENT ADDRESS/LOCATION:

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ALLIANCE COLTON - DREWS SUBSTATION

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BRIAN O' NEILL

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VICE PRESIDENT

TYPE OF BUSINESS AT THIS FACILITY:

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PRIMARY SIC CODE FOR THIS

FACILITY: 4911

NUMBER OF EMPLOYEES AT THIS FACILITY

CONTACT PERSON'S PHONE NUMBER:

(661) 836-9873

CONTACT PERSON'S FAX NUMBER:

(661) 836-98535647

CONTACT PERSON'S E-MAIL ADDRESS:

BRIAN-ONEILL@ALLIANCEPOWER.COM

Section III - Application Type

DESCRIPTION OF EQUIPMENT: GAS TURBINE No.2, 10.5 MW

PREVIOUS PERMIT (S): NONE

APPLICATION FOR (SEE INSTRUCTIONS):

☒ NEW CONSTRUCTION

☐ EXISTING EQUIPMENT WITHOUT PERMIT

☐ EXISTING EQUIPMENT WITH EXPIRED PERMIT

☐ MODIFICATION

☐ CHANGE OF PERMITTEE

☐ CHANGE OF LOCATION

☐ CHANGE OF PERMIT CONDITION

ARE YOU SUBMITTING MULTIPLE APPLICATIONS FOR
EQUIPMENT IDENTICAL TO THAT DESCRIBED ABOVE?

☒ Yes

☐ No

☒ APPLICATION FOR NON-TITLE V EQUIPMENT PERMIT. CHECK THE SUPPLEMENTAL SERIES 400-E-xx FORM(S) SUBMITTED WITH THIS 400-A FORM:

- ☐ 400-E-1 • PARTICULATE MATTER (PM₁₀) CONTROL EQUIPMENT
- ☐ 400-E-2 • VOLATILE ORGANIC COMPOUND (VOC) CONTROL EQUIPMENT
- ☐ 400-E-3 • SCRUBBER
- ☐ 400-E-4 • ABRASIVE BLASTING EQUIPMENT
- ☐ 400-E-6 • DEGREASER
- ☐ 400-E-7 • DRY CLEANING EQUIPMENT
- ☐ 400-E-8 • ETHYLENE OXIDE STERILIZER
- ☐ 400-E-9 • EXTERNAL COMBUSTION EQUIPMENT
- ☐ 400-E-10 • FOOD BROILER/FRYER
- ☐ 400-E-11 • FUEL DISPENSING AND STORAGE EQUIPMENT
- ☒ 400-E-12 • GAS TURBINE

- ☐ 400-E-13 • INTERNAL COMBUSTION EQUIPMENT
- ☐ 400-E-14 • OPEN PROCESS TANK
- ☐ 400-E-14a • OPEN PROCESS TANK; PROCESS LINE
- ☐ 400-E-15 • PRINTING EQUIPMENT
- ☐ 400-E-16 • SOLID MATERIALS STORAGE EQUIPMENT
- ☐ 400-E-17 • SPRAY BOOTH/OPEN SPRAY
- ☐ 400-E-17a • POWDER SPRAY BOOTH
- ☐ 400-E-18 • STORAGE TANK (LIQUID & GASEOUS MAT'L)
- ☐ 400-E-19 • WAVE SOLDER MACHINE
- ☐ 400-E-20 • ASBESTOS REMOVAL EQUIPMENT
- ☐ 400-XPB • ADDITIONAL INFORMATION SUBMITTED

☐ APPLICATION FOR TITLE V FACILITY PERMIT. PROVIDE INFORMATION REQUESTED ON REVERSE SIDE OF THIS FORM.

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.
SIGNATURE OF RESPONSIBLE OFFICIAL OF FIRM: TITLE OF RESPONSIBLE OFFICIAL OF FIRM:

TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL OF FIRM:

BRIAN O'NEILL

RESPONSIBLE OFFICIAL'S PHONE NUMBER

(661) 836-9873

DATE SIGNED:

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SIGNATURE OF PREPARER, IF PREPARED BY PERSON OTHER THAN RESPONSIBLE OFFICIAL OF FIRM: TITLE OF PREPARER:

VICE PRESIDENT

TYPE OR PRINT NAME OF PREPARER:

ARL LANY, SCEC

PREPARER'S TELEPHONE NUMBER

(714) 282-8240

DATE SIGNED:

TITLE V FACILITIES ONLY: COMPLETE OTHER SIDE

AQMD USE ONLY		APPLICATION/TRACKING #	PROJECT #	TYPE B C D	EQUIPMENT CATEGORY CODE: /	FEE SCHEDULE: \$	VALIDATION
ENG. A R DATE	ENG. A R DATE	CLASS I III IV	ASSIGNMENT UNIT	ENGINEER	ENF. SECT.	CHECK/MONEY ORDER #	AMOUNT \$



South Coast Air Quality Management District
P. O. Box 4944
Diamond Bar, CA 91765
(909) 396-2000

**APPLICATION FOR PERMIT TO CONSTRUCT
AND PERMIT TO OPERATE
FORM 400 - A (Drews - GT No.3)**

COPY

Non-Title V Facilities: This form must be accompanied by one or more 400-E-xx series form(s). Complete this side of form only.

Title V Facilities: Complete both sides of this form. Include additional forms as necessary.

NC/NOV NUMBER:

INSPECTOR

SECTOR

ISSUE DATE

Section I - Company Information

LEGAL NAME OF OPERATOR:

ALLIANCE COLTON LLC

☐ IRS OR ☐ S. S. NUMBER

PERMIT TO BE ISSUED TO (SEE INSTRUCTIONS):

ALLIANCE COLTON LLC

BUSINESS MAILING ADDRESS:

7950 S. LINCOLN ST. SUITE 114, LITTLETON, CO 80122

PERMIT MAILING ADDRESS, IF DIFFERENT FROM BUSINESS MAILING ADDRESS:

TYPE OF ORGANIZATION

☒ Corporation

☐ Individual

☐ Limited Partnership

☐ General Partnership

☐ Government Entity

☐ Other (Fill in):

**ARE YOU A SMALL BUSINESS?
(SEE INSTRUCTIONS)**

☐ Yes ☒ No

AVERAGE ANNUAL GROSS RECEIPTS \$

NUMBER OF EMPLOYEES:

**IS YOUR BUSINESS 51 % OR MORE
WOMAN/MINORITY OWNED? ☐**

Yes ☐ No ☒

THIS SECTION IS REQUIRED FOR ALL APPLICATIONS FOR NEW CONSTRUCTION OR MAJOR MODIFICATIONS.

ARE ALL MAJOR SOURCES UNDER SAME OWNERSHIP IN CALIFORNIA IN COMPLIANCE WITH

FEDERAL, STATE, AND LOCAL AIR POLLUTION CONTROL RULES? ☒ Yes ☐ No

ARE YOU THE OWNER OF THE EQUIPMENT UNDER THIS APPLICATION? ☒ Yes ☐ No

IF NO, ENTER THE LEGAL NAME OF OWNER

Section II - Facility Information

EQUIPMENT ADDRESS/LOCATION:

559 S. PEPPER AVE., COLTON, CA

FACILITY NAME:

ALLIANCE COLTON - DREWS SUBSTATION

FACILITY ID NUMBER:

PRINT NAME OF CONTACT PERSON:

BRIAN O' NEILL

TITLE OF CONTACT PERSON:

VICE PRESIDENT

TYPE OF BUSINESS AT THIS FACILITY:

POWER GENERATION

PRIMARY SIC CODE FOR THIS

FACILITY: 4911

NUMBER OF EMPLOYEES AT THIS FACILITY

**CONTACT PERSON'S PHONE NUMBER:
(661) 836-9873**

**CONTACT PERSON'S FAX NUMBER:
(661) 836-98535647**

CONTACT PERSON'S E-MAIL ADDRESS:

BRIAN-ONEILL@ALLIANCEPOWER.COM

Section III - Application Type

DESCRIPTION OF EQUIPMENT: GAS TURBINE No.3, 10.5 MW

PREVIOUS PERMIT (S): NONE

APPLICATION FOR (SEE INSTRUCTIONS):

☒ NEW CONSTRUCTION

☐ EXISTING EQUIPMENT WITHOUT PERMIT

☐ EXISTING EQUIPMENT WITH EXPIRED PERMIT

☐ MODIFICATION

☐ CHANGE OF PERMITTEE

☐ CHANGE OF LOCATION

☐ CHANGE OF PERMIT CONDITION

**ARE YOU SUBMITTING MULTIPLE APPLICATIONS FOR
EQUIPMENT IDENTICAL TO THAT DESCRIBED ABOVE?**

☒ Yes ☐ No

X APPLICATION FOR NON-TITLE V EQUIPMENT PERMIT. CHECK THE SUPPLEMENTAL SERIES 400-E-xx FORM(S) SUBMITTED WITH THIS 400-A FORM:

☐ 400-E-1 • PARTICULATE MATTER (PM₁₀) CONTROL EQUIPMENT
☐ 400-E-2 • VOLATILE ORGANIC COMPOUND (VOC) CONTROL EQUIPMENT
☐ 400-E-3 • SCRUBBER
☐ 400-E-4 • ABRASIVE BLASTING EQUIPMENT
☐ 400-E-6 • DEGREASER
☐ 400-E-7 • DRY CLEANING EQUIPMENT
☐ 400-E-8 • ETHYLENE OXIDE STERILIZER
☐ 400-E-9 • EXTERNAL COMBUSTION EQUIPMENT
☐ 400-E-10 • FOOD BROILER/FRYER
☐ 400-E-11 • FUEL DISPENSING AND STORAGE EQUIPMENT
☒ 400-E-12 • GAS TURBINE

☐ 400-E-13 • INTERNAL COMBUSTION EQUIPMENT
☐ 400-E-14 • OPEN PROCESS TANK
☐ 400-E-14a • OPEN PROCESS TANK; PROCESS LINE
☐ 400-E-15 • PRINTING EQUIPMENT
☐ 400-E-16 • SOLID MATERIALS STORAGE EQUIPMENT
☐ 400-E-17 • SPRAY BOOTH/OPEN SPRAY
☐ 400-E-17a • POWDER SPRAY BOOTH
☐ 400-E-18 • STORAGE TANK (LIQUID & GASEOUS MAT'L)
☐ 400-E-19 • WAVE SOLDER MACHINE
☐ 400-E-20 • ASBESTOS REMOVAL EQUIPMENT
☐ 400-XPP • ADDITIONAL INFORMATION SUBMITTED

☐ APPLICATION FOR TITLE V FACILITY PERMIT. PROVIDE INFORMATION REQUESTED ON REVERSE SIDE OF THIS FORM.

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.

SIGNATURE OF RESPONSIBLE OFFICIAL OF FIRM:

TITLE OF RESPONSIBLE OFFICIAL OF FIRM:

TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL OF FIRM:

BRIAN O'NEILL

RESPONSIBLE OFFICIAL'S PHONE NUMBER

(661) 836-9873

DATE SIGNED:

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.

SIGNATURE OF PREPARER, IF PREPARED BY PERSON OTHER THAN RESPONSIBLE OFFICIAL OF FIRM: TITLE OF PREPARER:

VICE PRESIDENT

TYPE OR PRINT NAME OF PREPARER:

KARL LANY, SCEC

PREPARER'S TELEPHONE NUMBER

(714) 282-8240

DATE SIGNED:

TITLE V FACILITIES ONLY: COMPLETE OTHER SIDE

**AQMD
USE ONLY**

APPLICATION/TRACKING #

PROJECT #

TYPE

B C D

EQUIPMENT CATEGORY CODE:

_____ / _____

FEE SCHEDULE:

\$

VALIDATION

**ENG. A R
DATE**

**ENG. A R
DATE**

**CLASS
I III IV**

**ASSIGNMENT
UNIT**

ENGINEER

**ENF.
SECT.**

**CHECK/MONEY ORDER AMOUNT
\$**



South Coast Air Quality Management District
P. O. Box 4944
Diamond Bar, CA 91765
(909) 396-2000

APPLICATION FOR PERMIT TO CONSTRUCT AND PERMIT TO OPERATE FORM 400 - A (Drews - GT No.4)

COPY

Non-Title V Facilities: This form must be accompanied by one or more 400-E-xx series form(s). Complete this side of form only.

NC/NOV NUMBER:

INSPECTOR

SECTOR

ISSUE DATE

Title V Facilities: Complete both sides of this form. Include additional forms as necessary.

Section I - Company Information

LEGAL NAME OF OPERATOR:

ALLIANCE COLTON LLC

☐ IRS OR ☐ S. S. NUMBER

PERMIT TO BE ISSUED TO (SEE INSTRUCTIONS):

ALLIANCE COLTON LLC

BUSINESS MAILING ADDRESS:

7950 S. LINCOLN ST. SUITE 114, LITTLETON, CO 80122

PERMIT MAILING ADDRESS, IF DIFFERENT FROM BUSINESS MAILING ADDRESS:

TYPE OF ORGANIZATION

☒ Corporation

☐ Limited Partnership

☐ Government Entity

☐ Individual

☐ General Partnership

☐ Other (Fill in):

**ARE YOU A SMALL BUSINESS?
(SEE INSTRUCTIONS)**

☐ Yes

☒ No

AVERAGE ANNUAL GROSS RECEIPTS \$

NUMBER OF EMPLOYEES:

**IS YOUR BUSINESS 51 % OR MORE
WOMAN/MINORITY OWNED? ☐**

Yes ☒ No

THIS SECTION IS REQUIRED FOR ALL APPLICATIONS FOR NEW CONSTRUCTION OR MAJOR MODIFICATIONS.

**ARE ALL MAJOR SOURCES UNDER SAME OWNERSHIP IN CALIFORNIA IN COMPLIANCE WITH
FEDERAL, STATE, AND LOCAL AIR POLLUTION CONTROL RULES?**

☒ Yes ☐ No

ARE YOU THE OWNER OF THE EQUIPMENT UNDER THIS APPLICATION?

☒ Yes ☐ No ☐ IRS OR ☐ S. S. NUMBER OF OWNER

IF NO, ENTER THE LEGAL NAME OF OWNER

Section II - Facility Information

EQUIPMENT ADDRESS/LOCATION:

559 S. PEPPER AVE., COLTON, CA

FACILITY NAME:

ALLIANCE COLTON - DREWS SUBSTATION

FACILITY ID NUMBER:

PRINT NAME OF CONTACT PERSON:

BRIAN O' NEILL

TITLE OF CONTACT PERSON:

VICE PRESIDENT

TYPE OF BUSINESS AT THIS FACILITY:

POWER GENERATION

**PRIMARY SIC CODE FOR THIS
FACILITY: 4911**

NUMBER OF EMPLOYEES AT THIS FACILITY

CONTACT PERSON'S PHONE NUMBER:

(661) 836-9873

CONTACT PERSON'S FAX NUMBER:

(661) 836-98535647

CONTACT PERSON'S E-MAIL ADDRESS:

BRIAN-ONEILL@ALLIANCEPOWER.COM

Section III - Application Type

DESCRIPTION OF EQUIPMENT: GAS TURBINE No.4, 10.5 MW

PREVIOUS PERMIT (S): NONE

APPLICATION FOR (SEE INSTRUCTIONS):

☒ NEW CONSTRUCTION

☐ MODIFICATION

☐ CHANGE OF LOCATION

**ARE YOU SUBMITTING MULTIPLE APPLICATIONS FOR
EQUIPMENT IDENTICAL TO THAT DESCRIBED ABOVE?**

☐ EXISTING EQUIPMENT WITHOUT PERMIT

☐ CHANGE OF PERMITTEE

☐ CHANGE OF PERMIT CONDITION

☒ Yes ☐ No

☐ EXISTING EQUIPMENT WITH EXPIRED PERMIT

☒ **APPLICATION FOR NON-TITLE V EQUIPMENT PERMIT. CHECK THE SUPPLEMENTAL SERIES 400-E-xx FORM(S) SUBMITTED WITH THIS 400-A FORM:**

- ☐ 400-E-1 • PARTICULATE MATTER (PM₁₀) CONTROL EQUIPMENT
- ☐ 400-E-2 • VOLATILE ORGANIC COMPOUND (VOC) CONTROL EQUIPMENT
- ☐ 400-E-3 • SCRUBBER
- ☐ 400-E-4 • ABRASIVE BLASTING EQUIPMENT
- ☐ 400-E-6 • DEGREASER
- ☐ 400-E-7 • DRY CLEANING EQUIPMENT
- ☐ 400-E-8 • ETHYLENE OXIDE STERILIZER
- ☐ 400-E-9 • EXTERNAL COMBUSTION EQUIPMENT
- ☐ 400-E-10 • FOOD BROILER/FRYER
- ☐ 400-E-11 • FUEL DISPENSING AND STORAGE EQUIPMENT
- ☒ 400-E-12 • GAS TURBINE

- ☐ 400-E-13 • INTERNAL COMBUSTION EQUIPMENT
- ☐ 400-E-14 • OPEN PROCESS TANK
- ☐ 400-E-14a • OPEN PROCESS TANK; PROCESS LINE
- ☐ 400-E-15 • PRINTING EQUIPMENT
- ☐ 400-E-16 • SOLID MATERIALS STORAGE EQUIPMENT
- ☐ 400-E-17 • SPRAY BOOTH/OPEN SPRAY
- ☐ 400-E-17a • POWDER SPRAY BOOTH
- ☐ 400-E-18 • STORAGE TANK (LIQUID & GASEOUS MAT'L)
- ☐ 400-E-19 • WAVE SOLDER MACHINE
- ☐ 400-E-20 • ASBESTOS REMOVAL EQUIPMENT
- ☐ 400-APP • ADDITIONAL INFORMATION SUBMITTED

☐ **APPLICATION FOR TITLE V FACILITY PERMIT. PROVIDE INFORMATION REQUESTED ON REVERSE SIDE OF THIS FORM.**

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.

SIGNATURE OF RESPONSIBLE OFFICIAL OF FIRM:

TITLE OF RESPONSIBLE OFFICIAL OF FIRM:

TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL OF FIRM:

BRIAN O'NEILL

RESPONSIBLE OFFICIAL'S PHONE NUMBER

(661) 836-9873

DATE SIGNED:

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.

SIGNATURE OF PREPARER, IF PREPARED BY PERSON OTHER THAN RESPONSIBLE OFFICIAL OF FIRM: TITLE OF PREPARER:

VICE PRESIDENT

TYPE OR PRINT NAME OF PREPARER:

RL LANY, SCEC

PREPARER'S TELEPHONE NUMBER

(714) 282-8240

DATE SIGNED:

TITLE V FACILITIES ONLY: COMPLETE OTHER SIDE

AQMD USE ONLY		APPLICATION/TRACKING #	PROJECT #	TYPE B C D	EQUIPMENT CATEGORY CODE: _____/____	FEE SCHEDULE: \$	VALIDATION
ENG. A R	ENG. A R	CLASS	ASSIGNMENT	ENF.	CHECK/MONEY ORDER	AMOUNT	
DATE	DATE	I III IV	UNIT	ENGINEER	SECT.	\$	



South Coast Air Quality Management District
P. O. Box 4944
Diamond Bar, CA 91765
(909) 396-2000

Form 400-A must accompany all submittals.

GAS TURBINE FORM 400 - E - 12 (Century - GT No.1)

COPY

For:	Change of location, equipment w/expired permit, or change of operator:	ALL other application types: : Submit all other information requested and:
Title V Facilities	Complete Sections I, IV, & V	Complete Sections I, II, III, IV, & V
All Other Facilities	Complete Sections I & IV	Complete Sections I, II, III, & IV

Section I - Facility/Application Information

1. Business Name: **ALLIANCE COLTON LLC - CENTURY SUBSTATION** Facility ID: **NONE**

2. The requested application is for a(n): Date of Occurrence: **02/15/01**
a. ☒ New Construction b. ☐ Change of Location
c. ☐ Modification of Equipment/Process d. ☐ Existing Equipment with Expired Permit
e. ☐ Existing Equipment Operating without a Permit; Initial Operation Date: _____
f. ☐ Change of Condition(s); Specify the change of condition(s) requested: _____
g. ☐ Change of Operator; List previous name of operator and Facility ID #: _____

3. If equipment has previous written permit, list Permit Number or Device Number(s): **NONE**
a. Write Rule 301 description of this equipment/process: **GAS TURBINE, <50MW**

4. Are multiple applications being submitted for similar equipment (as defined in Rule 301) described below?
☐ No ☒ Yes; If Yes, Number of Multiple Units: **4**

5. Have you been issued a Notice to Comply (NTC) or Notice of Violation (NOV) for this equipment?
☒ No ☐ Yes; NTC #: _____ NOV #: _____ Issue Date: _____ / _____ / _____

6. For New Construction, Modification, or Change of Location:
Estimated Construction Start Date: **03/30/01** Estimated Completion Date: **05/30/01**

7. For this project, has a California Environmental Quality Act (CEQA) document been required by another governmental agency? ☒ No ☐ Yes, for agency (Provide name): _____
a. Are you required by another governmental agency to have a permit? ☒ No ☐ Yes, for agency (Provide name) _____
b. Are any of these permits discretionary? ☒ No ☐ Yes; list: _____

8. Do you claim confidentiality of data? ☒ No ☐ Yes (attach explanation)

9. Is the equipment located within 1,000 feet from the outer boundary of a school? ☒ No ☐ Yes
(If Yes, complete a. for all public or private school, grade K-12, within a 1/4 mile radius of facility property)
a. School Name(s): _____ Telephone No(s): _____
School Address(s): _____ School Address(s): _____

Section II - Equipment Information

1. Turbine Manufacturer: **GENERAL ELECTRIC** Model No.: **10B1** Serial No.: _____

2. Turbine Size (based on Higher Heating Value):
Manufacturer Maximum Input Rating: **116.3 MMBTU/hour**
Manufacturer Maximum Output Rating: **10.5 MW**

3. Turbine Function:
a. ☐ Driving Pump/Compressor d. ☐ Exhaust Heat Recovery
b. ☒ Electrical Generation e. ☐ Steam Generation
c. ☐ Emergency Peaking Unit f. ☐ Other (specify): _____

4. Cycle Type:
a. ☒ Simple Cycle c. ☐ Regenerative Cycle
b. ☐ Combined Cycle d. ☐ Other (specify): _____

5. Fuel Information (check all that apply):
a. ☒ Natural Gas e. ☐ Digester Gas*
b. ☐ Diesel Oil f. ☐ Landfill Gas*
c. ☐ Propane g. ☐ Other* (specify): _____
d. ☐ Gasoline

* If Digester Gas, Landfill Gas, and/or Other are checked, attach fuel analysis indicating all constituents and HHV.

TURN OVER AND COMPLETE

AQMD USE ONLY	APPLICATION/TRACKING #	PROJECT #	TYPE B C D	EQUIPMENT CATEGORY CODE: _____/____	FEE SCHEDULE: \$	VALIDATION
ENG. A R DATE	ENG. A R DATE	CLASS I III IV	ASSIGNMENT UNIT ENGINEER	ENF. SECT.	CHECK/MONEY ORDER #	AMOUNT \$

Section III - Operation Information

1. Maximum Rated Full Load Fuel Consumption Rate: **123,000 cf/hr**
2. Average Load: **95 %**
3. Is Turbine equipped with exhaust heat recovery steam generator (HRSG)? ☐ Yes ☒ No
If Yes, supply the size, flow rate, steam output capacity, and temperature profile.
4. Is Turbine equipped with duct burners? ☐ Yes ☒ No
If Yes, provide burner description, fuel usage, combustion air input, and location of burner(s).
5. Is duct burner used as air pollution control equipment? ☐ Yes ☒ No
If Yes and duct burner is permitted, list Permit Number(s) or Device Number(s) of control equipment: _____
If Yes and duct burner is not permitted, a separate permit is required. Please see Form 400-E-GI for instructions.
6. a. Is Turbine equipped with air pollution control equipment? ☒ Yes ☐ No
b. If Yes, please explain and list Permit Number(s) or Device Number(s) of control equipment:
UNIT WILL INCORPORATE CATALYTICA XONON COMBUSTION TECHNOLOGY
c. Steam/Water Injection? ☐ Yes ☒ No
Injection Rate: _____ lbs water/lbs fuel or mole water/mole fuel
d. Ammonia (NH₃) Injection? ☐ Yes ☒ No
Injection Rate: _____ lbs NH₃/lbs fuel or mole NH₃/mole fuel
e. Combustion Type? ☐ Tubular ☐ Can-Annular ☐ Annular
f. Selective Catalytic Reduction (SCR)? ☐ Yes ☒ No
Reactor Temperature: _____ °F to _____ °F
If Yes and SCR is not permitted, a separate permit is required. Please see Form 400-E-GI for instructions.

Section IV - Emission Information

1. Emissions Data:
- | POLLUTANTS | EMISSIONS BEFORE CONTROL ¹ | | EMISSIONS AFTER CONTROL | |
|------------|---------------------------------------|--------------|-------------------------|-------------|
| | PPM ² | LB/HR | PPM ² | LB/HR |
| ROG | _____ | 0.35 | _____ | 0.35 |
| NOX | _____ | 11.81 | _____ | 2.80 |
| CO | _____ | 5.76 | _____ | 2.90 |
| PM | _____ | 0.77 | _____ | 0.77 |
| SOX | _____ | 0.4 | _____ | 0.4 |
- ¹ BASED ON TEMPERATURE, FUEL CONSUMPTION, AND MW OUTPUT
² DRY AND CORRECTED TO 15% OXYGEN
- ☒ MANUFACTURER DATA ATTACHED ☒ EPA EMISSION FACTORS
☐ AQMD EMISSION FACTORS ☐ SOURCE TEST DATA (ATTACH SOURCE TEST RESULTS)
2. Stack or Vent Data: A. STACK HEIGHT: **45 FEET** INCHES C. EXHAUST FLOW RATE: **199,537 ACFM**
B. EXHAUST TEMPERATURE: **928** °F D. EXHAUST PRESSURE: _____ INCHES WATER
3. Operating Schedule: weeks/year: **17-50** days/week: **5-7**
Max. Hrs.: **24 / DAY** Average Hrs.: **5 / DAY**

Section V - Applicant Certification Statement

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.

SIGNATURE OF RESPONSIBLE OFFICIAL OF FIRM:

TITLE OF RESPONSIBLE OFFICIAL OF FIRM:

VICE PRESIDENT

TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL OF FIRM:

BRIAN O'NEILL

RESPONSIBLE OFFICIAL'S TELEPHONE NUMBER

(661) 836 - 9873

DATE SIGNED:

/ /

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.

SIGNATURE OF PREPARER:

TITLE OF PREPARER:

V.P. SCEC

TYPE OR PRINT NAME OF PREPARER:

KARL LANY

PREPARER'S TELEPHONE NUMBER

(714) 282-8240

DATE SIGNED:

The requested application involves a(n): (check all that apply)

- a. ☐ Minor Permit Revision e. ☐ Permit Shield (complete Form 500-D)
b. ☐ Group Processing (check only if applicable) f. ☐ Streamlined Permit Conditions
c. ☐ DeMinimis Significant Permit Revision g. ☐ Alternative Operating Scenario (AOS)
d. ☐ Significant Permit Revision h. ☐ Other (specify): _____
i. ☐ Non-Title V Permit Processing (Available until initial Title V permit is issued)



South Coast Air Quality Management District
P. O. Box 4944
Diamond Bar, CA 91765
(909) 396-2000

Form 400-A must accompany all submittals.

GAS TURBINE FORM 400 - E - 12 (Drews - GT No.2)

COPY

For:	Change of location, equipment w/expired permit, or change of operator:	ALL other application types: Submit all other information requested and:
Title V Facilities	Complete Sections I, IV, & V	Complete Sections I, II, III, IV, & V
All Other Facilities	Complete Sections I & IV	Complete Sections I, II, III, & IV

Section I - Facility/Application Information

- Business Name: **ALLIANCE COLTON LLC - DREWS SUBSTATION** Facility ID: **NONE**
- The requested application is for a(n): Date of Occurrence: **02/15/01**
 - ☒ New Construction
 - ☐ Change of Location
 - ☐ Modification of Equipment/Process
 - ☐ Existing Equipment with Expired Permit
 - ☐ Existing Equipment Operating without a Permit; Initial Operation Date: _____
 - ☐ Change of Condition(s); Specify the change of condition(s) requested: _____
 - ☐ Change of Operator; List previous name of operator and Facility ID #: _____
- If equipment has previous written permit, list Permit Number or Device Number(s): **NONE**
 - Write Rule 301 description of this equipment/process: **GAS TURBINE, <50MW**
- Are multiple applications being submitted for similar equipment (as defined in Rule 301) described below?
☐ No ☒ Yes; If Yes, Number of Multiple Units: **4**
- Have you been issued a Notice to Comply (NTC) or Notice of Violation (NOV) for this equipment?
☒ No ☐ Yes; NTC #: _____ NOV #: _____ Issue Date: _____ / _____ / _____
- For New Construction, Modification, or Change of Location:
Estimated Construction Start Date: **03/30/01** Estimated Completion Date: **05/30/01**
- For this project, has a California Environmental Quality Act (CEQA) document been required by another governmental agency? ☒ No ☐ Yes, for agency (Provide name): _____
 - Are you required by another governmental agency to have a permit? ☒ No ☐ Yes, for agency (Provide name) _____
 - Are any of these permits discretionary? ☒ No ☐ Yes; list: _____
- Do you claim confidentiality of data? ☒ No ☐ Yes (attach explanation)
- Is the equipment located within 1,000 feet from the outer boundary of a school? ☒ No ☐ Yes
(If Yes, complete a. for all public or private school, grade K-12, within a 1/4 mile radius of facility property)
 - School Name(s): _____ Telephone No(s): _____
School Address(s): _____ School Address(s): _____

Section II - Equipment Information

- Turbine Manufacturer: **GENERAL ELECTRIC** Model No.: **10B1** Serial No.: _____
 - Turbine Size (based on Higher Heating Value):
Manufacturer Maximum Input Rating: **116.3 MMBTU/hour**
Manufacturer Maximum Output Rating: **10.5 MW**
 - Turbine Function:
 - ☐ Driving Pump/Compressor
 - ☒ Electrical Generation
 - ☐ Emergency Peaking Unit
 - ☐ Exhaust Heat Recovery
 - ☐ Steam Generation
 - ☐ Other (specify): _____
 - Cycle Type:
 - ☒ Simple Cycle
 - ☐ Combined Cycle
 - ☐ Regenerative Cycle
 - ☐ Other (specify): _____
 - Fuel Information (check all that apply):
 - ☒ Natural Gas
 - ☐ Diesel Oil
 - ☐ Propane
 - ☐ Gasoline
 - ☐ Digester Gas*
 - ☐ Landfill Gas*
 - ☐ Other* (specify): _____
- * If Digester Gas, Landfill Gas, and/or Other are checked, attach fuel analysis indicating all constituents and HHV.

TURN OVER AND COMPLETE

AQMD USE ONLY	APPLICATION/TRACKING #	PROJECT #	TYPE	EQUIPMENT CATEGORY CODE:	FEE SCHEDULE:	VALIDATION
ENG. A R	ENG. A R	CLASS	B C D	ENF.	CHECK/MONEY ORDER	AMOUNT
DATE	DATE	I III IV	UNIT	ENGINEER	#	\$

Section III - Operation Information

1. Maximum Rated Full Load Fuel Consumption Rate: **123,000 cf/hr**
2. Average Load: **95 %**
3. Is Turbine equipped with exhaust heat recovery steam generator (HRSG)? ☐ Yes ☒ No
If Yes, supply the size, flow rate, steam output capacity, and temperature profile.
4. Is Turbine equipped with duct burners? ☐ Yes ☒ No
If Yes, provide burner description, fuel usage, combustion air input, and location of burner(s).
5. Is duct burner used as air pollution control equipment? ☐ Yes ☒ No
If Yes and duct burner is permitted, list Permit Number(s) or Device Number(s) of control equipment: _____
If Yes and duct burner is not permitted, a separate permit is required. Please see Form 400-E-GI for instructions.
6. a. Is Turbine equipped with air pollution control equipment? ☒ Yes ☐ No
b. If Yes, please explain and list Permit Number(s) or Device Number(s) of control equipment:
UNIT WILL INCORPORATE CATALYTICA XONON COMBUSTION TECHNOLOGY
c. Steam/Water Injection? ☐ Yes ☒ No
Injection Rate: _____ lbs water/lbs fuel or mole water/mole fuel
d. Ammonia (NH₃) Injection? ☐ Yes ☒ No
Injection Rate: _____ lbs NH₃/lbs fuel or mole NH₃/mole fuel
e. Combustion Type? ☐ Tubular ☐ Can-Annular ☐ Annular
f. Selective Catalytic Reduction (SCR)? ☐ Yes ☒ No
Reactor Temperature: _____ °F to _____ °F
If Yes and SCR is not permitted, a separate permit is required. Please see Form 400-E-GI for instructions.

Section IV - Emission Information

1. Emissions Data:
- | POLLUTANTS | EMISSIONS BEFORE CONTROL ¹ | | EMISSIONS AFTER CONTROL | |
|------------|---------------------------------------|--------------|-------------------------|-------------|
| | PPM ² | LB/HR | PPM ² | LB/HR |
| ROG | _____ | 0.35 | _____ | 0.35 |
| NOX | _____ | 11.81 | _____ | 2.80 |
| CO | _____ | 5.76 | _____ | 2.90 |
| PM | _____ | 0.77 | _____ | 0.77 |
| SOX | _____ | 0.4 | _____ | 0.4 |
- ¹ BASED ON TEMPERATURE, FUEL CONSUMPTION, AND MW OUTPUT
² DRY AND CORRECTED TO 15% OXYGEN
- ☒ MANUFACTURER DATA ATTACHED ☒ EPA EMISSION FACTORS
☐ AQMD EMISSION FACTORS ☐ SOURCE TEST DATA (ATTACH SOURCE TEST RESULTS)
2. Stack or Vent Data::
A. STACK HEIGHT: **45 FEET** _____ INCHES C. EXHAUST FLOW RATE: **199,537 ACFM**
B. EXHAUST TEMPERATURE: **928 °F** D. EXHAUST PRESSURE: _____ INCHES WATER
3. Operating Schedule: weeks/year: **17-50** days/week: **5-7**
Max. Hrs.: **24 / DAY** Average Hrs.: **5 / DAY**

Section V - Applicant Certification Statement

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.
SIGNATURE OF RESPONSIBLE OFFICIAL OF FIRM: _____ TITLE OF RESPONSIBLE OFFICIAL OF FIRM: _____

VICE PRESIDENT

TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL OF FIRM:
BRIAN O'NEILL

RESPONSIBLE OFFICIAL'S TELEPHONE NUMBER
(661) 836 - 9873

DATE SIGNED:
____/____/____

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.
SIGNATURE OF PREPARER: _____ TITLE OF PREPARER: _____

V.P. SCEC

TYPE OR PRINT NAME OF PREPARER:
KARL LANY

PREPARER'S TELEPHONE NUMBER
(714) 282-8240

DATE SIGNED:
____/____/____

The requested application involves a(n): (check all that apply)

- a. ☐ Minor Permit Revision e. ☐ Permit Shield (complete Form 500-D)
b. ☐ Group Processing (check only if applicable) f. ☐ Streamlined Permit Conditions
c. ☐ DeMinimis Significant Permit Revision g. ☐ Alternative Operating Scenario (AOS)
d. ☐ Significant Permit Revision h. ☐ Other (specify): _____
i. ☐ Non-Title V Permit Processing (Available until initial Title V permit is issued)



South Coast Air Quality Management District
P. O. Box 4944
Diamond Bar, CA 91765
(909) 396-2000

Form 400-A must accompany all submittals.

GAS TURBINE FORM 400 - E - 12 (Draws - GT No.3)

COPY

For:	Change of location, equipment w/expired permit, or change of operator:	ALL other application types: Submit all other information requested and:
Title V Facilities	Complete Sections I, IV, & V	Complete Sections I, II, III, IV, & V
All Other Facilities	Complete Sections I & IV	Complete Sections I, II, III, & IV

Section I - Facility/Application Information

- Business Name: **ALLIANCE COLTON LLC - DREWS SUBSTATION** Facility ID: **NONE**
- The requested application is for a(n): Date of Occurrence: **02/15/01**
 - ☒ New Construction
 - ☐ Change of Location
 - ☐ Modification of Equipment/Process
 - ☐ Existing Equipment with Expired Permit
 - ☐ Existing Equipment Operating without a Permit; Initial Operation Date: _____
 - ☐ Change of Condition(s); Specify the change of condition(s) requested: _____
 - ☐ Change of Operator; List previous name of operator and Facility ID #: _____
- If equipment has previous written permit, list Permit Number or Device Number(s): **NONE**
 - Write Rule 301 description of this equipment/process: **GAS TURBINE, <50MW**
- Are multiple applications being submitted for similar equipment (as defined in Rule 301) described below?
☐ No ☒ Yes; If Yes, Number of Multiple Units: **4**
- Have you been issued a Notice to Comply (NTC) or Notice of Violation (NOV) for this equipment?
☒ No ☐ Yes; NTC #: _____ NOV #: _____ Issue Date: _____ / _____ / _____
- For New Construction, Modification, or Change of Location:
Estimated Construction Start Date: **03/30/01** Estimated Completion Date: **05/30/01**
- For this project, has a California Environmental Quality Act (CEQA) document been required by another governmental agency? ☒ No ☐ Yes, for agency (Provide name): _____
 - Are you required by another governmental agency to have a permit? ☒ No ☐ Yes, for agency (Provide name) _____
 - Are any of these permits discretionary? ☒ No ☐ Yes; list: _____
- Do you claim confidentiality of data? ☒ No ☐ Yes (attach explanation)
- Is the equipment located within 1,000 feet from the outer boundary of a school? ☒ No ☐ Yes
(If Yes, complete a. for all public or private school, grade K-12, within a 1/4 mile radius of facility property)
 - School Name(s): _____ Telephone No(s): _____
School Address(s): _____ School Address(s): _____

Section II - Equipment Information

- Turbine Manufacturer: **GENERAL ELECTRIC** Model No.: **10B1** Serial No.: _____
 - Turbine Size (based on Higher Heating Value):
Manufacturer Maximum Input Rating: **116.3 MMBTU/hour**
Manufacturer Maximum Output Rating: **10.5 MW**
 - Turbine Function:
 - ☐ Driving Pump/Compressor
 - ☒ Electrical Generation
 - ☐ Emergency Peaking Unit
 - ☐ Exhaust Heat Recovery
 - ☐ Steam Generation
 - ☐ Other (specify): _____
 - Cycle Type:
 - ☒ Simple Cycle
 - ☐ Combined Cycle
 - ☐ Regenerative Cycle
 - ☐ Other (specify): _____
 - Fuel Information (check all that apply):
 - ☒ Natural Gas
 - ☐ Diesel Oil
 - ☐ Propane
 - ☐ Gasoline
 - ☐ Digester Gas*
 - ☐ Landfill Gas*
 - ☐ Other* (specify): _____
- * If Digester Gas, Landfill Gas, and/or Other are checked, attach fuel analysis indicating all constituents and HHV.

TURN OVER AND COMPLETE

AQMD USE ONLY		APPLICATION/TRACKING #		PROJECT #		TYPE B C D		EQUIPMENT CATEGORY CODE: _____/____		FEE SCHEDULE: \$		VALIDATION	
ENG. A R	ENG. A R	CLASS	ASSIGNMENT	UNIT		ENGINEER		ENF.		CHECK/MONEY ORDER		AMOUNT	
DATE	DATE	I III IV						SECT.		#		\$	

Section III - Operation Information

1. Maximum Rated Full Load Fuel Consumption Rate: **123,000 cf/hr**
2. Average Load: **95 %**
3. Is Turbine equipped with exhaust heat recovery steam generator (HRSG)? ☐ Yes ☒ No
If Yes, supply the size, flow rate, steam output capacity, and temperature profile.
4. Is Turbine equipped with duct burners? ☐ Yes ☒ No
If Yes, provide burner description, fuel usage, combustion air input, and location of burner(s).
5. Is duct burner used as air pollution control equipment? ☐ Yes ☒ No
If Yes and duct burner is permitted, list Permit Number(s) or Device Number(s) of control equipment: _____
If Yes and duct burner is not permitted, a separate permit is required. Please see Form 400-E-GI for instructions.
6. a. Is Turbine equipped with air pollution control equipment? ☒ Yes ☐ No
b. If Yes, please explain and list Permit Number(s) or Device Number(s) of control equipment:
UNIT WILL INCORPORATE CATALYTICA XONON COMBUSTION TECHNOLOGY
c. Steam/Water Injection? ☐ Yes ☒ No
Injection Rate: _____ lbs water/lbs fuel or mole water/mole fuel
d. Ammonia (NH₃) Injection? ☐ Yes ☒ No
Injection Rate: _____ lbs NH₃/lbs fuel or mole NH₃/mole fuel
e. Combustion Type? ☐ Tubular ☐ Can-Annular ☐ Annular
f. Selective Catalytic Reduction (SCR)? ☐ Yes ☒ No
Reactor Temperature: _____ °F to _____ °F
If Yes and SCR is not permitted, a separate permit is required. Please see Form 400-E-GI for instructions.

Section IV - Emission Information

1. Emissions Data:
- | POLLUTANTS | EMISSIONS BEFORE CONTROL ¹ | | EMISSIONS AFTER CONTROL | |
|------------|---------------------------------------|--------------|-------------------------|-------------|
| | PPM ² | LB/HR | PPM ² | LB/HR |
| ROG | _____ | 0.35 | _____ | 0.35 |
| NOX | _____ | 11.81 | _____ | 2.80 |
| CO | _____ | 5.76 | _____ | 2.90 |
| PM | _____ | 0.77 | _____ | 0.77 |
| SOX | _____ | 0.4 | _____ | 0.4 |
- ¹ BASED ON TEMPERATURE, FUEL CONSUMPTION, AND MW OUTPUT
² DRY AND CORRECTED TO 15% OXYGEN
- ☒ MANUFACTURER DATA ATTACHED ☒ EPA EMISSION FACTORS
☐ AQMD EMISSION FACTORS ☐ SOURCE TEST DATA (ATTACH SOURCE TEST RESULTS)
2. Stack or Vent Data::
A. STACK HEIGHT: **45 FEET** _____ INCHES C. EXHAUST FLOW RATE: **199,537 ACFM**
B. EXHAUST TEMPERATURE: **928 °F** D. EXHAUST PRESSURE: _____ INCHES WATER
3. Operating Schedule: weeks/year: **17-50** days/week: **5-7**
Max. Hrs.: **24 / DAY** Average Hrs.: **5 / DAY**

Section V - Applicant Certification Statement

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.

SIGNATURE OF RESPONSIBLE OFFICIAL OF FIRM:

TITLE OF RESPONSIBLE OFFICIAL OF FIRM:

VICE PRESIDENT

TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL OF FIRM:

BRIAN O'NEILL

RESPONSIBLE OFFICIAL'S TELEPHONE NUMBER

(661) 836 - 9873

DATE SIGNED:

/ /

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.

SIGNATURE OF PREPARER:

TITLE OF PREPARER:

V.P. SCEC

TYPE OR PRINT NAME OF PREPARER:

KARL LANY

PREPARER'S TELEPHONE NUMBER

(714) 282-8240

DATE SIGNED:

The requested application involves a(n): (check all that apply)

- a. ☐ Minor Permit Revision e. ☐ Permit Shield (complete Form 500-D)
b. ☐ Group Processing (check only if applicable) f. ☐ Streamlined Permit Conditions
c. ☐ DeMinimis Significant Permit Revision g. ☐ Alternative Operating Scenario (AOS)
d. ☐ Significant Permit Revision h. ☐ Other (specify): _____
i. ☐ Non-Title V Permit Processing (Available until initial Title V permit is issued)



South Coast Air Quality Management District
P. O. Box 4944
Diamond Bar, CA 91765
(909) 396-2000

Form 400-A must accompany all submittals.

GAS TURBINE FORM 400 - E - 12 (Draws - GT No.4)

COPY

For:	Change of location, equipment w/expired permit, or change of operator:	ALL other application types: Submit all other information requested and:
Title V Facilities	Complete Sections I, IV, & V	Complete Sections I, II, III, IV, & V
All Other Facilities	Complete Sections I & IV	Complete Sections I, II, III, & IV

Section I - Facility/Application Information

- Business Name: **ALLIANCE COLTON LLC - DREWS SUBSTATION** Facility ID: **NONE**
- The requested application is for a(n): Date of Occurrence: **02/15/01**
 - ☒ New Construction
 - ☐ Change of Location
 - ☐ Modification of Equipment/Process
 - ☐ Existing Equipment with Expired Permit
 - ☐ Existing Equipment Operating without a Permit; Initial Operation Date: _____
 - ☐ Change of Condition(s); Specify the change of condition(s) requested: _____
 - ☐ Change of Operator; List previous name of operator and Facility ID #: _____
- If equipment has previous written permit, list Permit Number or Device Number(s): **NONE**
 - Write Rule 301 description of this equipment/process: **GAS TURBINE, <50MW**
- Are multiple applications being submitted for similar equipment (as defined in Rule 301) described below?
☐ No ☒ Yes; If Yes, Number of Multiple Units: **4**
- Have you been issued a Notice to Comply (NTC) or Notice of Violation (NOV) for this equipment?
☒ No ☐ Yes; NTC #: _____ NOV #: _____ Issue Date: _____/_____/_____
- For New Construction, Modification, or Change of Location:
Estimated Construction Start Date: **03/30/01** Estimated Completion Date: **05/30/01**
- For this project, has a California Environmental Quality Act (CEQA) document been required by another governmental agency? ☒ No ☐ Yes, for agency (Provide name): _____
 - Are you required by another governmental agency to have a permit? ☒ No ☐ Yes, for agency (Provide name) _____
 - Are any of these permits discretionary? ☒ No ☐ Yes; list: _____
- Do you claim confidentiality of data? ☒ No ☐ Yes (attach explanation)
- Is the equipment located within 1,000 feet from the outer boundary of a school? ☒ No ☐ Yes
(If Yes, complete a. for all public or private school, grade K-12, within a 1/4 mile radius of facility property)
 - School Name(s): _____ Telephone No(s): _____
School Address(s): _____ School Address(s): _____

Section II - Equipment Information

- Turbine Manufacturer: **GENERAL ELECTRIC** Model No.: **10B1** Serial No.: _____
- Turbine Size (based on Higher Heating Value):
Manufacturer Maximum Input Rating: **116.3 MMBTU/hour**
Manufacturer Maximum Output Rating: **10.5 MW**
- Turbine Function:
 - ☐ Driving Pump/Compressor
 - ☒ Electrical Generation
 - ☐ Emergency Peaking Unit
 - ☐ Exhaust Heat Recovery
 - ☐ Steam Generation
 - ☐ Other (specify): _____
- Cycle Type:
 - ☒ Simple Cycle
 - ☐ Combined Cycle
 - ☐ Regenerative Cycle
 - ☐ Other (specify): _____
- Fuel Information (check all that apply):
 - ☒ Natural Gas
 - ☐ Diesel Oil
 - ☐ Propane
 - ☐ Gasoline
 - ☐ Digester Gas*
 - ☐ Landfill Gas*
 - ☐ Other* (specify): _____

* If Digester Gas, Landfill Gas, and/or Other are checked, attach fuel analysis indicating all constituents and HHV.

TURN OVER AND COMPLETE

AQMD USE ONLY	APPLICATION/TRACKING #	PROJECT #	TYPE B C D	EQUIPMENT CATEGORY CODE: _____/____	FEE SCHEDULE: \$	VALIDATION
ENG. A R DATE	ENG. A R DATE	CLASS I III IV	ASSIGNMENT UNIT ENGINEER	ENF. SECT.	CHECK/MONEY ORDER #	AMOUNT \$

Section III - Operation Information

1. Maximum Rated Full Load Fuel Consumption Rate: **123,000 cf/hr**
2. Average Load: **95 %**
3. Is Turbine equipped with exhaust heat recovery steam generator (HRSG)? ☐ Yes ☒ No
If Yes, supply the size, flow rate, steam output capacity, and temperature profile.
4. Is Turbine equipped with duct burners? ☐ Yes ☒ No
If Yes, provide burner description, fuel usage, combustion air input, and location of burner(s).
5. Is duct burner used as air pollution control equipment? ☐ Yes ☒ No
If Yes and duct burner is permitted, list Permit Number(s) or Device Number(s) of control equipment: _____
If Yes and duct burner is not permitted, a separate permit is required. Please see Form 400-E-GI for instructions.
6. a. Is Turbine equipped with air pollution control equipment? ☒ Yes ☐ No
b. If Yes, please explain and list Permit Number(s) or Device Number(s) of control equipment:
UNIT WILL INCORPORATE CATALYTICA XONON COMBUSTION TECHNOLOGY
c. Steam/Water Injection? ☐ Yes ☒ No
Injection Rate: _____ lbs water/lbs fuel or mole water/mole fuel
d. Ammonia (NH₃) Injection? ☐ Yes ☒ No
Injection Rate: _____ lbs NH₃/lbs fuel or mole NH₃/mole fuel
e. Combustion Type? ☐ Tubular ☐ Can-Annular ☐ Annular
f. Selective Catalytic Reduction (SCR)? ☐ Yes ☒ No
Reactor Temperature: _____ °F to _____ °F
If Yes and SCR is not permitted, a separate permit is required. Please see Form 400-E-GI for instructions.

Section IV - Emission Information

1. Emissions Data:
- | POLLUTANTS | EMISSIONS BEFORE CONTROL ¹ | | EMISSIONS AFTER CONTROL | |
|------------|---------------------------------------|--------------|-------------------------|-------------|
| | PPM ² | LB/HR | PPM ² | LB/HR |
| ROG | _____ | 0.35 | _____ | 0.35 |
| NOX | _____ | 11.81 | _____ | 2.80 |
| CO | _____ | 5.76 | _____ | 2.90 |
| PM | _____ | 0.77 | _____ | 0.77 |
| SOX | _____ | 0.4 | _____ | 0.4 |
- ¹ BASED ON TEMPERATURE, FUEL CONSUMPTION, AND MW OUTPUT
² DRY AND CORRECTED TO 15% OXYGEN
- ☒ MANUFACTURER DATA ATTACHED ☒ EPA EMISSION FACTORS
☐ AQMD EMISSION FACTORS ☐ SOURCE TEST DATA (ATTACH SOURCE TEST RESULTS)
2. Stack or Vent Data::
A. STACK HEIGHT: **45 FEET** _____ INCHES C. EXHAUST FLOW RATE: **199,537 ACFM**
B. EXHAUST TEMPERATURE: **928 °F** D. EXHAUST PRESSURE: _____ INCHES WATER
3. Operating Schedule: weeks/year: **17-50** days/week: **5-7**
Max. Hrs.: **24 / DAY** Average Hrs.: **5 / DAY**

Section V - Applicant Certification Statement

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.

SIGNATURE OF RESPONSIBLE OFFICIAL OF FIRM:

TITLE OF RESPONSIBLE OFFICIAL OF FIRM:

VICE PRESIDENT

TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL OF FIRM:

BRIAN O'NEILL

RESPONSIBLE OFFICIAL'S TELEPHONE NUMBER

(661) 836 - 9873

DATE SIGNED:

/ /

I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT.

SIGNATURE OF PREPARER:

TITLE OF PREPARER:

V.P. SCEC

TYPE OR PRINT NAME OF PREPARER:

KARL LANY

PREPARER'S TELEPHONE NUMBER

(714) 282-8240

DATE SIGNED:

The requested application involves a(n): (check all that apply)

- a. ☐ Minor Permit Revision e. ☐ Permit Shield (complete Form 500-D)
b. ☐ Group Processing (check only if applicable) f. ☐ Streamlined Permit Conditions
c. ☐ DeMinimis Significant Permit Revision g. ☐ Alternative Operating Scenario (AOS)
d. ☐ Significant Permit Revision h. ☐ Other (specify): _____
i. ☐ Non-Title V Permit Processing (Available until initial Title V permit is issued)



South Coast Air Quality
Management District
21865 East Copley Drive
Diamond Bar, CA 91765
(909) 396- 2000

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) APPLICABILITY FORM 400 - CEQA

COPY

The SCAQMD is required by state law, the California Environmental Quality Act (CEQA), to review discretionary permit project applications for potential air quality and other environmental impacts. This form is a screening tool to assist the SCAQMD in clarifying whether or not the project¹ has the potential to generate significant adverse environmental impacts that might require preparation of a CEQA document [CEQA Guidelines §15060(a)].² Refer to the attached instructions for guidance in completing this form.³ For each Form 400-A application, also complete and submit one Form 400-CEQA. If submitting multiple Form 400-A applications for the same project at the same time, only one 400-CEQA form is necessary for the entire project. If you need assistance completing this form, contact Lori Inga at (909) 396-3109.

FACILITY INFORMATION

Facility Name: ALLIANCE COLTON, LLC - DREWS SUBSTATION Facility ID (6-Digit): _____

Project Description: (4) 10.5MW GAS TURBINES, SIMPLE CYCLE, NATURAL GAS FIRED

REVIEW FOR EXEMPTION FROM FURTHER CEQA ACTION

Check "Yes" or "No" as applicable

	Yes	No	Is this application for:
A.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	A request for a change of permittee only (without equipment modifications)?
B.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Equipment certification or equipment registration?
C.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	A CEQA and/or NEPA document previously or currently prepared that specifically evaluates this project? If yes, a permit cannot be issued until a Final CEQA document and Notice of Determination is submitted.
D.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Equipment damaged as a result of a disaster during state of emergency?
E.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	A Title V permit renewal (without equipment modifications)?
F.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	A Title V administrative permit revision?
G.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	The conversion of an existing permit into an initial Title V permit?
H.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	A functionally identical permit unit replacement with no increase in rating or emissions?
I.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	A change of daily VOC permit limit to a monthly VOC permit limit?

If "Yes" is checked for any question above, your application does not require additional evaluation for CEQA applicability. Skip to page 2, "SIGNATURES" and sign and date this form.

REVIEW OF IMPACTS WHICH MAY TRIGGER CEQA

Complete Sections I-VI by checking "Yes" or "No" as applicable. To avoid delays in processing your application(s), explain all "Yes" responses on a separate sheet and attach it to this form.

	Yes	No	Section I - General
1.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Has this project generated any known public controversy regarding potential adverse impacts that may be generated by the project? Controversy may be construed as concerns raised by local groups at public meetings; adverse media attention such as negative articles in newspapers or other periodical publications, local news programs, environmental justice issues, etc.
2.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is this project part of a larger project?
Section II - Air Quality			
3.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Will there be any demolition, excavating, and/or grading construction activities that encompass an area exceeding 20,000 square feet?
4.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Does this project include the open outdoor storage of dry bulk solid materials that could generate dust? If Yes, include a plot plan with the application package.

¹ A "project" means the whole of an action which has a potential for resulting in physical change to the environment, including construction activities, clearing or grading of land, improvements to existing structures, and activities or equipment involving the issuance of a permit. For example, a project might include installation of a new, or modification of an existing internal combustion engine, dry-cleaning facility, boiler, gas turbine, spray coating booth, solvent cleaning tank, etc.

COPY

	Yes	No	
5.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Would this project result in noticeable off-site odors from activities that may not be subject to SCAQMD permit requirements? For example, compost materials or other types of greenwaste (i.e., lawn clippings, tree trimmings, etc.) have the potential to generate odor complaints subject to Rule 402 - Nuisance.
6.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Does this project cause an increase of emissions from marine vessels, trains and/or airplanes?
7.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Will the proposed project increase the QUANTITY of hazardous materials stored aboveground onsite or transported by mobile vehicle to or from the site by greater than or equal to the amounts associated with each compound on the attached Table 1?*
Section III - Water Resources			
8.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Will the project increase demand for water at the facility by more than 5,000,000 gallons per day? The following examples identify some, but not all, types of projects that may result in a "yes" answer to this question: 1) projects that generate steam; 2) projects that use water as part of the air pollution control equipment; 3) projects that require water as part of the production process; 4) projects that require new or expansion of existing sewage treatment facilities; 5) projects where water demand exceeds the capacity of the local water purveyor to supply sufficient water for the project; and 6) projects that require new or expansion of existing water supply facilities.
9.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Will the project require construction of new water conveyance infrastructure? Examples of such projects are when water demands exceed the capacity of the local water purveyor to supply sufficient water for the project, or require new or modified sewage treatment facilities such that the project requires new water lines, sewage lines, sewage hook-ups, etc.
Section IV - Transportation/Circulation			
10.			Will the project result in (Check all that apply):
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	a. the need for more than 350 new employees?
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	b. an increase in heavy-duty transport truck traffic to and/or from the facility by more than 350 truck round-trips per day?
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	c. increase customer traffic by more than 700 visits per day?
Section V - Noise			
11.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Will the project include equipment with a noise specification GREATER THAN 90 decibels (dB)?
Section VI - Public Services			
12.			Will the project create a permanent need for new or additional public services in any of the following areas (Check all that apply):
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	a. Solid waste disposal? Check "No" if the projected potential amount of wastes generated by the project is less than five tons per day.
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	b. Hazardous waste disposal? Check "No" if the projected potential amount of hazardous wastes generated by the project is less than 42 cubic yards per day (or equivalent in pounds).
REMINDER: For each "Yes" checked in the sections above, attach all pertinent information including but not limited to estimated quantities, volumes, weights, etc.			

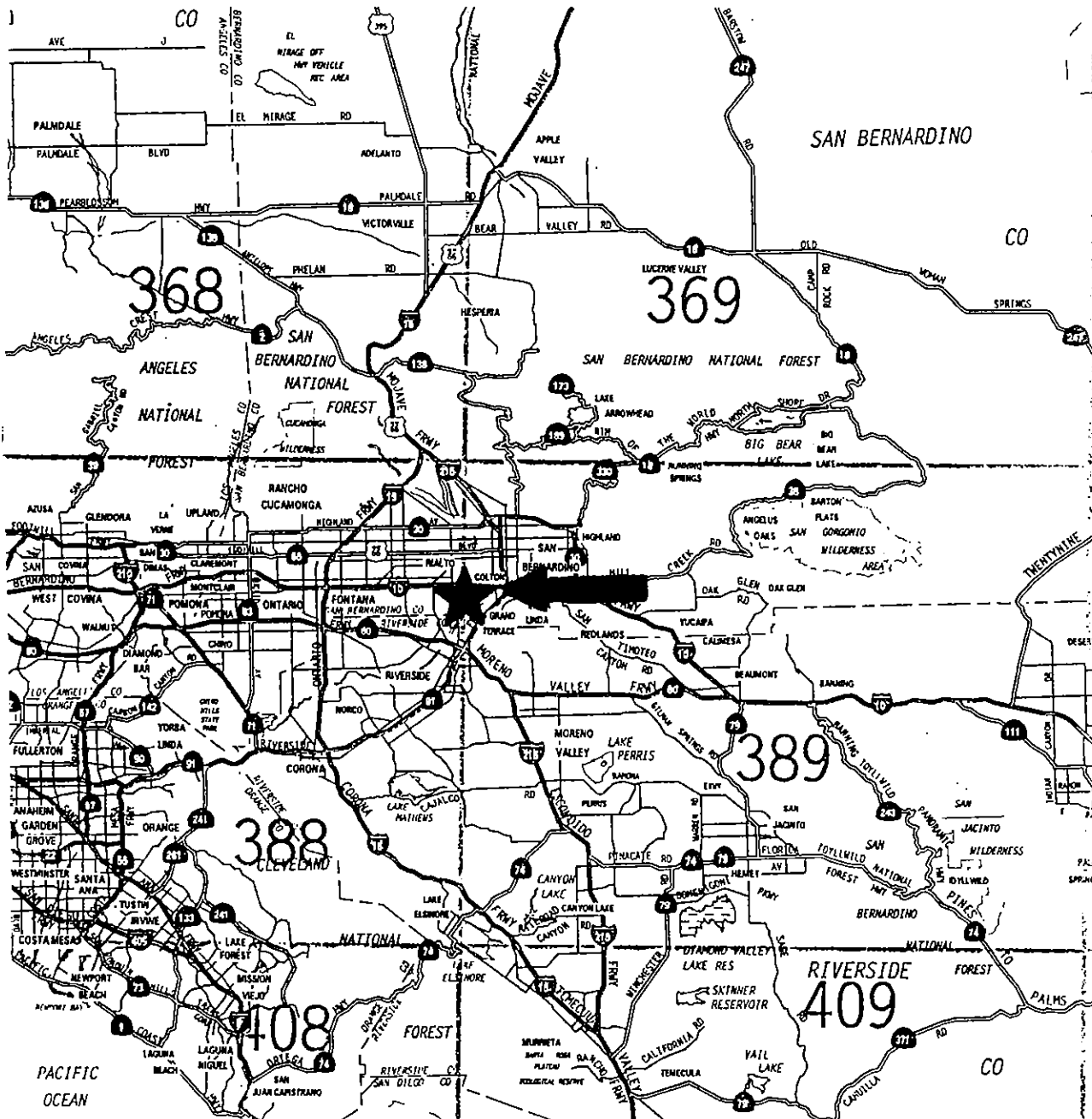
SIGNATURES			
I HEREBY CERTIFY THAT ALL INFORMATION CONTAINED HEREIN AND INFORMATION SUBMITTED WITH THIS APPLICATION IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE. I UNDERSTAND THAT THIS FORM IS A SCREENING TOOL AND THAT THE SCAQMD RESERVES THE RIGHT TO CONSIDER OTHER PERTINENT INFORMATION IN DETERMINING CEQA APPLICABILITY.			
SIGNATURE OF RESPONSIBLE OFFICIAL OF FIRM:		TITLE OF RESPONSIBLE OFFICIAL OF FIRM:	
TYPE OR PRINT NAME OF RESPONSIBLE OFFICIAL OF FIRM:		RESPONSIBLE OFFICIAL'S TELEPHONE NUMBER:	DATE Signed:
BRIAN O'NEILL		(661) 836-9873	
SIGNATURE OF PREPARER, IF PREPARED BY PERSON OTHER THAN RESPONSIBLE OFFICIAL OF FIRM:			TITLE OF PREPARER:
			V.P., SCEC
TYPE OR PRINT NAME OF PREPARER:		PREPARER'S TELEPHONE NUMBER:	DATE Signed:
KARL A. LANY		(714) 282-8240	

THIS CONCLUDES FORM 400-CEQA. INCLUDE THIS FORM AND THE ATTACHMENTS WITH FORM 400-A.

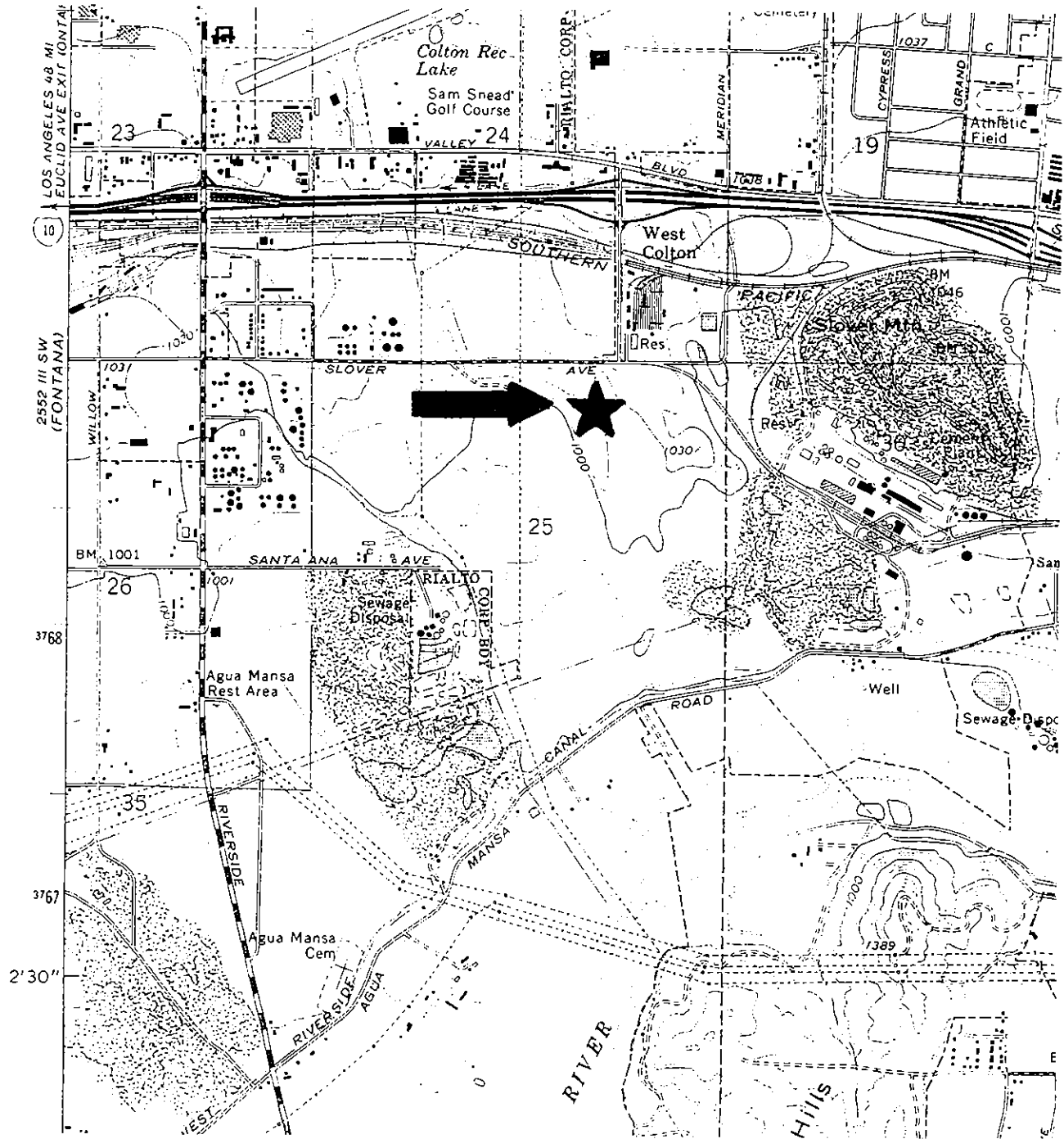
APPENDIX B

FACILITY LOCATION MAPS AND DIAGRAMS

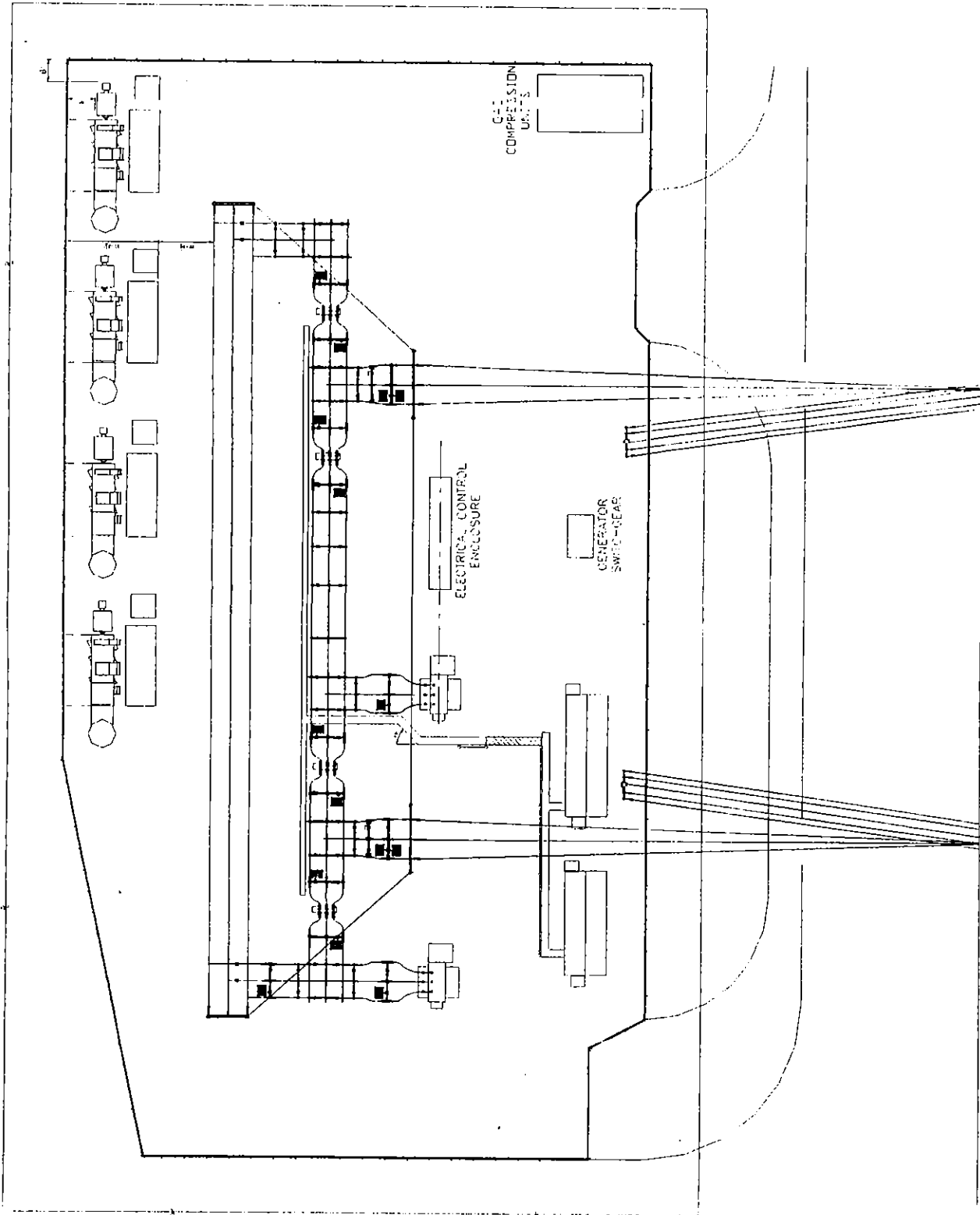
**Alliance Colton, LLC
Drews Substation
Regional Location Map**



**Alliance Colton, LLC
Drews Substation
Facility Location Map**



Alliance Colton, LLC Draws Substation Facility Plot Plan



DATE _____

[illegible]

APPENDIX C

EQUIPMENT INFORMATION

GE AERO ENERGY PRODUCTS/GE GE10- Estimated Average Engine Performance NOT FOR GUARANTEE NAT GAS
 Done by: NP 12/18/00 2:36:35 PMGE10-80012-6
 City of Colton, California

CASE # 209
 AMBIENT
 DB, °F 59.0
 WB, °F 51.3
 RH, % 60.0
 ALT, FT 1000
 ENGINE INLET
 TEMP, °F 59.0
 RH, % 60.0
 CONDITIONING NONE
 TONS or KBTU 0

KW, GEN TERM 10464
 Btu/KW-hr, LHV 11118
 FUEL
 MMBtu/hr, LHV 116.3
 lb/hr 6,130

NOZZLE WATER
 lb/hr 0
 °F 0

COMPRESSOR STEAM
 lb/hr 0
 °F 0

INLET LOSS, inH2O 4.00
 EXHAUST LOSS, inH2O 4.00

PT SPEED, rpm 0
 COMP DISCH, psia 219.2
 COMP DISCH, °F 775

GEARBOX EFF 0.99
 GENERATOR EFF 0.976

EXHAUST PARAMETERS
 °F 928
 lb/s 98.8
 lb/hr 355680
 Cp Btu/lb-R 0.2722

EMISSIONS (NOT FOR USE IN ENVIRONMENTAL PERMITS, Ref. @ 15% O2)
 NOx, ppmvd 25
 NOx, lb/hr 12
 CO, ppmvd 20
 CO, lb/hr 7

EXH WGT % WET (NOT FOR USE IN ENVIRONMENTAL PERMITS)
 AR 1.3162
 N2 73.8766
 O2 16.3192
 CO2 4.4426
 H2O 4.0349

EXH MOLE % DRY (NOT FOR USE IN ENVIRONMENTAL PERMITS)
 AR 1.0042
 N2 80.3760
 O2 15.5432
 CO2 3.0766
 H2O 0.0000



**CITY OF COLTON
DREWS SUBSTATION LEASE AGREEMENT
WITH ALLIANCE COLTON, LLC**

1. PARTIES AND DATE.

This Lease Agreement ("Agreement") is made and entered into this 6th day of December, 2000 ("Effective Date") by and between the City of Colton (hereinafter referred to as "City"), a municipal corporation, and Alliance Colton, LLC (hereinafter referred to as "Lessee"), a California corporation. The City and Lessee are sometimes collectively referred to herein as the "Parties."

2. RECITALS.

2.1 Premises. The City is the owner of that certain real property located at San Bernardino County Assessors Parcel Number 025808114, at 559 S. Pepper Avenue, south of Slover Avenue, in the City of Colton, County of San Bernardino, State of California, commonly known as the Drews Substation and more particularly described in Exhibit "A" attached hereto and incorporated herein by reference ("City Property"). The City desires to lease to Lessee and Lessee desires to lease from the City certain portions of the City Property more particularly described in Exhibit "B" attached hereto and incorporated herein by reference ("Premises"). Lessee shall have the right to use the Premises for the purpose of installing, removing, replacing, modifying, maintaining, and operating electric generation facilities and equipment (collectively, "Lessee Facilities") in exchange for due and adequate consideration, the receipt and sufficiency of which are acknowledged by the Parties and further described and set forth in this Agreement.

2.2 Access. During the Term of this Agreement, as defined herein, Lessee shall have supervised access, including ingress and egress, to the Premises to install, operate, maintain and remove the Lessee's Facilities, as defined below, under the following conditions: (1) Lessee shall give 24 hours prior written notice to City when requesting access (Written notice can include the lessee submitting a monthly schedule to the City identifying the timetable for access to Premises for routine operations and maintenance); (2) at the City's option, a City representative shall remain on the Premises during the period of access to Lessee; and (3) prior to and during the period of access, Lessee shall not be in default of any obligation under this Agreement. In the event the Lessee Facilities fail to operate, Lessee may have immediate supervised access to the Premises, provided such access does not disrupt City activities. The City shall not unreasonably deny access to Lessee in the event of such an emergency. Access will be provided to Lessee in those portions of the City Property that are specifically designed for access, ingress, and egress to the Premises.

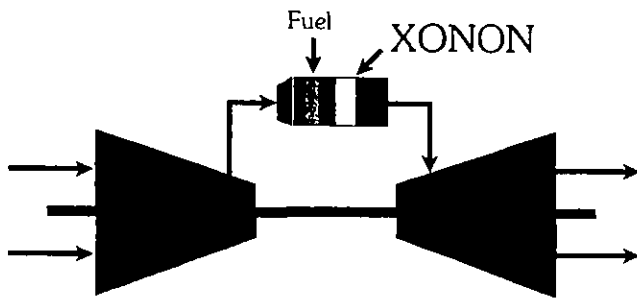
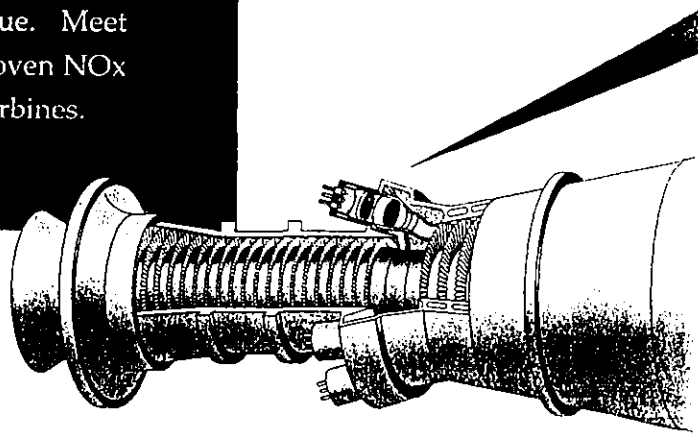


XONON
No NOx Combustion

The ultimate

The Regulatory Challenge Is Now

The time has come when the gas turbine user must meet existing regulatory requirements and prepare for future regulatory challenges. At the same time the user must select the NO_x control technology that provides optimum operating flexibility and economic value. Meet this challenge with the XONON Combustion System, a proven NO_x control technology now available for new and existing gas turbines.



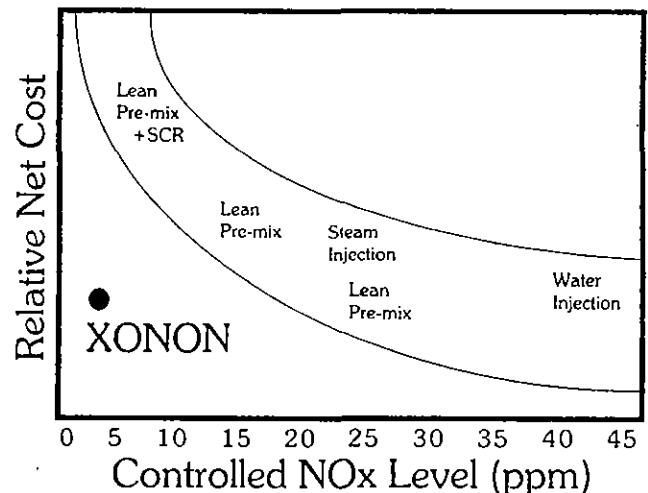
Get Value From Your NO_x Control Solution

XONON System Value Benefits:

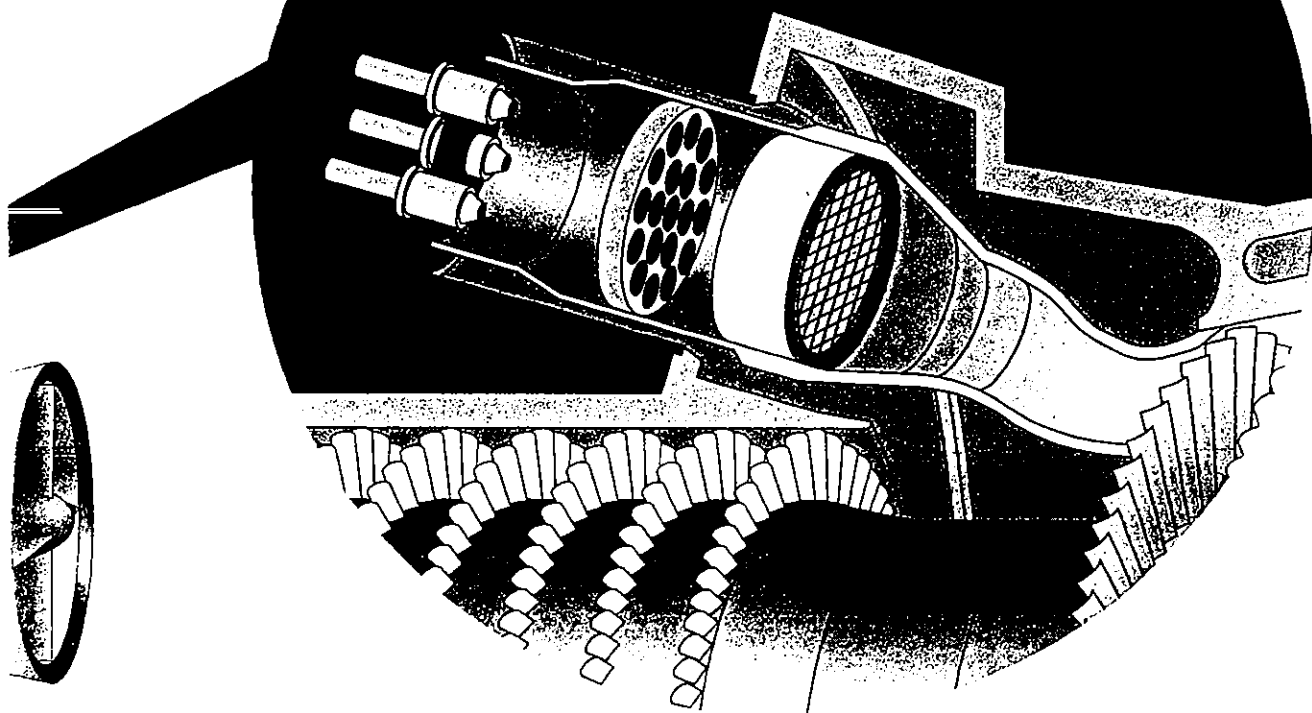
- Reduce offset requirements.
- Generate emission reduction credits.
- Faster, simpler, less costly permitting.
- Potentially avoid Title V permits.

XONON System Operational Benefits:

- No combustor vibration or noise.
- No change in engine performance.
- No increase in CO or UHC emissions.



NO_x solution



Breakthrough Technology

The XONON Combustion System, as an integral part of the combustor, results in ultra low NO_x, CO and UHC emissions without compromising engine performance. Manufacturers such as General Electric and Solar Turbines have demonstrated it, the Advanced Turbine Systems (ATS) programs funded by the US Department of Energy have selected it, and it is now being verified in field trials. The operational and economic value of the XONON Combustion System is now available to meet your requirements.

Get XONON Power

Apply the XONON solution to new and existing turbines to meet your operational and regulatory requirements. For new turbines contact your turbine manufacturer; for installed turbines contact GENXON Power Systems. Catalytica Customer Service is always available.

It's proven at 3ppm

The XONON Combustor



It's working at 3ppm

CATALYTICA COMBUSTION SYSTEMS, INC.
430 Ferguson Drive, Mountain View, CA 94043-5272
Tel: 415-960-3000 Fax: 415-960-0127
www.catalytica-inc.com

GENXON is a joint venture of Catalytica Combustion Systems, Inc. and Woodward Governor Company dedicated to serve the gas turbine retrofit market.
GENXON is a trademark of GENXON Power Systems.
XONON is a registered trademark of Catalytica Combustion Systems, Inc.

Catalytica Overview



Catalytica, Inc.

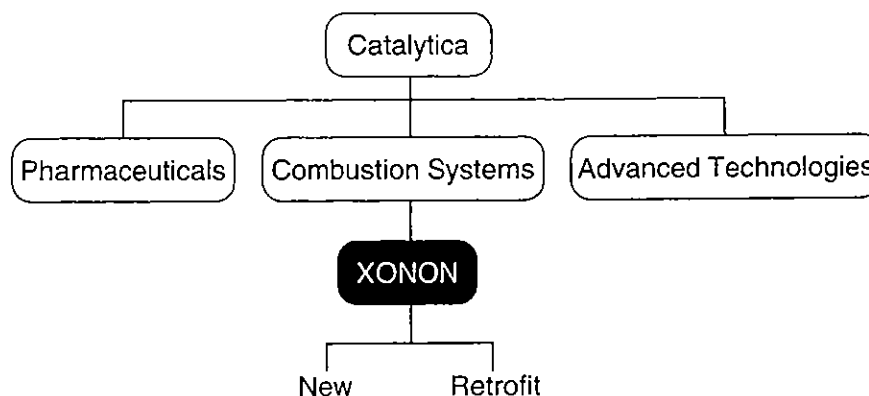
Catalytica, Inc. (NASDAQ: CTAL) builds businesses in high growth industries where the company's catalytic technologies optimize manufacturing and solve environmental problems. In addition to Catalytica Combustion Systems, Inc., Catalytica Pharmaceuticals, Inc. provides process development and product manufacturing to the pharmaceutical industry, and Catalytica Advanced Technologies, Inc. serves as an incubator for new catalytic technologies for industrial applications. Catalytica has a market capitalization of about \$800 million and 1,400 employees.

Find Catalytica on the Worldwide Web at: www.catalytica-inc.com

Catalytica Combustion Systems, Inc.

Catalytica Combustion Systems, Inc. (CCSI), in cooperation with gas turbine manufacturers, provides advanced combustion systems for gas turbines, based upon the breakthrough technology called Xonon™ (pronounced Zo-non). The Xonon combustion system achieves ultra-low air emissions without the use of burdensome emission clean-up systems by avoiding the formation of air pollutants in the combustion process. Xonon is the most economic and efficient alternative to reduce emissions without impacting turbine performance.

The first commercial-ready Xonon combustion system is installed and operating on a gas turbine at Silicon Valley Power in Santa Clara, California. Performance results are being reported periodically on CCSI's web site.



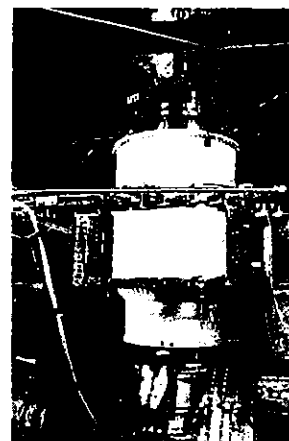
Baseline Performance Results

A prototype of the Xonon™ combustion system (XONON-1) was installed on a 1.5 MW Kawasaki M1A-13A gas turbine, and was operated in a test cell at Tulsa, Oklahoma, to establish baseline conditions. At Tulsa, during 1100 operating hours and 220 starts, Xonon was proven to reduce NO_x to less than 2.5 ppm and CO and UHC to less than 6 ppm without impacting engine performance.

Silicon Valley Power (SVP)

The next step in commercialization, a 1.5 MW Kawasaki turbine equipped with XONON-1 was installed at a municipally owned electric utility, Silicon Valley Power, in Santa Clara, California for operation on the grid. Operations began in late 1998 by re-establishing the baseline conditions, completing the compliance tests to assure the operation met permit conditions, implement the control system for unattended operation (24 hours a day, 7 days a week) and establish a reliable connection to the electrical grid.

A commercial-ready combustor, XONON-2, was then installed on the Kawasaki turbine and a RAMD program began in June 1999 to validate the performance of the Xonon combustion system. RAMD (Reliability, Availability, Maintainability, Durability) is a program that is sponsored in part by the US Department of Energy (DOE), Gas Research Institute (GRI), California Energy Commission (CEC) under their PIER program, and the California Air Resources Board (CARB) under their ICAT program.



XONON-2 installed
with test instruments

SVP Update (November 1999)

The commercial-ready Xonon combustion system, installed on a 1.5 MW Kawasaki gas turbine has been operating 24 hours a day, 7 days a week supplying clean electricity to Silicon Valley Power's customers. Performance results are summarized in the following table.

Performance Criteria	Results (as of 11/15/99)
RAMD Operating Hours	> 3300
Average NOx emissions	< 1.5 ppm (corrected to 15% O ₂)
Average CO emissions	< 6 ppm
Average UHC emissions	< 1 ppm
Availability (total uptime/total period time)	90.5%
Reliability (unplanned outage/total period time)	98.5%

The Xonon combustion system exhibits ultra-low dynamic pressure oscillations (vibration/noise) with results less than 0.6 psi (rms) over the entire range and measured at several points in the combustor. In addition, the Xonon system demonstrates a consistent/uniform temperature profile.

Vibration and Noise

Xonon

Cool Combustion

- *Kawasaki Results*
- *General Electric Results*

Current regulations in many parts of the world require very low NO_x emissions for gas turbines. This has been a challenge for gas turbines because lean-premix combustion systems and other NO_x reducing technologies can encounter flame instabilities that cause pressure pulsations and vibration within the engine. The effects can range from a simple nuisance—the turbine makes disturbing noise when it runs—to a major mechanical failure from vibration induced fatigue of key structural components.

In contrast, the Xonon™ combustion system has been demonstrated in full-scale, full-operating conditions for a number of different combustor designs and, in all cases, has exhibited excellent stability with very low dynamic pressure pulsations.

Operating continuously on the grid at Silicon Valley Power, low dynamic pressure pulsations are being achieved with a Xonon combustion system on a 1.5 MW Kawasaki gas turbine. Figure 1 shows the magnitude of the dynamic pressure pulsations measured across a broad frequency range in a full-size Xonon system. NO_x emissions are below 2.5 ppm.

A similar test was conducted with a 20-inch diameter Xonon Module on a GE Frame 9E combustor test stand (equivalent to ~8 megawatts of electrical output) under base load operating conditions. The overall measured dynamics of 0.46 psi were significantly below the typical levels in lean-premix systems. Under these conditions, NO_x levels of 1.7 ppm were measured.

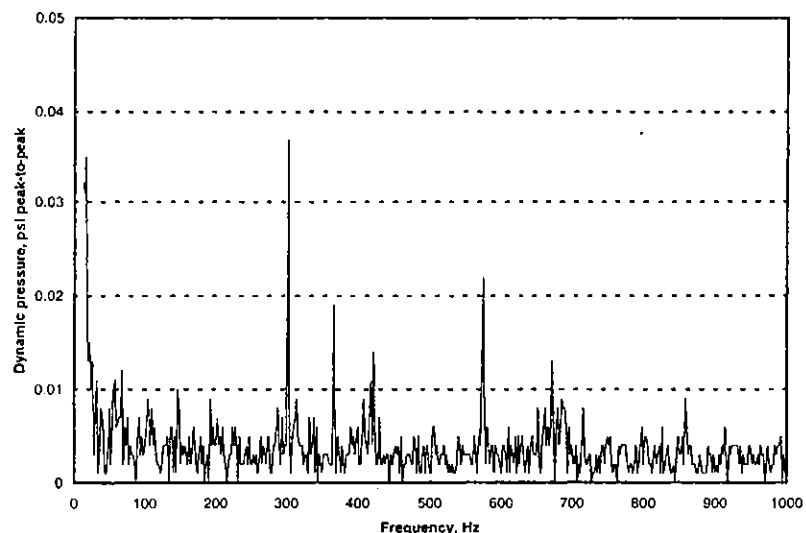


Figure 1: Dynamics measured for a Xonon combustor on a 1.5 MW Kawasaki gas turbine at base load.

Operations Overview



- *Power Output*
- *Starting/Shutdown*
- *Loading/Unloading*

Power Output and Heat Rate

Maintaining engine efficiency and power output are two important requirements for any new gas turbine technology. The Xonon™ combustion system can meet these requirements by achieving the desired turbine inlet temperature profile and by minimizing the total combustor pressure drop.

In adapting Xonon to a particular gas turbine, the Xonon combustion system is designed to accommodate the compressor outlet and turbine inlet conditions characteristic of that turbine. As a result, the Xonon combustor precisely matches the conditions of the turbine's conventional combustor, allowing the turbine to achieve the same level of performance.

In addition, the Xonon module and combustor include low-pressure drop preburners and fuel mixing systems to ensure minimal pressure loss.

In operational tests on a Kawasaki M1A-13A engine with Xonon, it was demonstrated that the turbine inlet temperature profile can be made to be identical to that of a conventional diffusion flame combustor. That is, Xonon was designed to match the turbine inlet temperature and the combustor pressure drop. This design ensures no impact on turbine performance.

Extensive load tests have also been conducted on the Kawasaki M1A-13A and have validated full power output and efficiency within 0.5% of a standard combustor.

Starting and Shutdown

The Xonon technology is a new approach to combustion for gas turbine engines. As such, it requires a control strategy geared to its unique capabilities and operating specifications.

Catalytica Combustion Systems engineers – who developed the Xonon technology – and Woodward Governor Company engineers – specializing in controls – have cooperatively developed such a control system for the start-up, loading and shutdown of a turbine incorporating Xonon.

A control system was developed for and tested on the Kawasaki M1A-13A engine with Xonon. The control system incorporates state of the art "feed-forward" and "model-based" control features, as well as conventional fixed schedules that allow the engine to be started, accelerated to its idle condition and synchronized to the grid with the push of a button.



This engine has been repeatedly started and synchronized to the grid in ambient conditions that range from 40°F to 100°F. The un-manned control system maintains baseload operations 24 hours a day, 7 days a week. Based on test results and regularly scheduled inspections, the control algorithm has proven to be safe and reliable for both the Xonon combustion system and the engine.

As this engine operation continues, the starting control strategy will be expanded to cover a wider range of ambient conditions.

Loading and Unloading

The Xonon system can deliver ultra-low emissions levels over a range of catalyst inlet temperatures and fuel/air ratios. This allows the system to maintain ultra-low emissions while responding to changes in the turbine load.

A turndown in load on a Xonon-equipped turbine is accomplished by lowering the fuel flow to the catalyst, while increasing the fuel flow to the preburner to maintain the inlet temperature to the catalyst. This maintains the Xonon catalyst within its optimal operating range for continued ultra-low emissions at part-load. Fuel flows are adjusted automatically by the combustor control system to maintain optimum performance regardless of changes in the turbine load.

The Xonon catalyst in a Kawasaki turbine has demonstrated the ability to meet emissions targets from base-load down to as low as 70% load conditions. The Xonon catalyst and the Woodward control systems have also demonstrated the capability to respond to step changes of as much as 80% in load.

The control strategy and system are being further developed to provide the load-step and full-load rejection requirements for other gas turbines.

Today, US gas turbine emission regulations require new installations to meet NOx emission levels of 2.5 to 25 parts per million (ppm) depending on location, attainment status and size of the installation. The general trend is toward the lower end of this range with permits in non-attainment areas requiring single digit NOx levels for all new permits.

There are a number of regulatory programs and pressures that are moving permits to lower levels. Several of the programs that we reported last year have been delayed because of a court action. However, the trend toward lower permitting levels continues.

The following sections review the status of these new programs and the impact of the older regulations.

National Ambient Air Quality Standards (NAAQS)

In June 1997, the NAAQS was revised by executive order. This would have resulted in lower NOx emission requirements by 2003. The Federal Appeals Court remanded the new standard to the EPA for more justification. It is expected that new levels will be required, but the timing may be delayed by a year or two.

NOx SIP Call (SIP: State Implementation Plan)

The EPA has determined that NOx emissions from some states are contributing to the ozone compliance problems in downwind states. The downwind states were referred to as the Ozone Transport Corridor (OTC). In September 1998, the EPA issued a NOx SIP Call which requires 22 Eastern states and the District of Columbia to revise their state implementation plans to achieve additional reductions in NOx. They indicate that these reductions are required to give the OTC states a chance at achieving ozone attainment. The only target is NOx, and it is expected that some or most states will target gas turbines as one of the potential sources for reduction.

Technology Forcing Regulations

The primary factor in moving the permitted levels lower stems from the New Source Review (NSR) regulations. In the last 25 years, the EPA was treating the NSR rule and its Best Available Control Technology (BACT) and Lowest Achievable Emission Rate (LAER) provisions as a technology forcing measure. This mechanism has been responsible for the introduction of many new emission control technologies, including gas turbine emission controls.

Recently, the trend has changed. Continually pushing lower levels without concern for economic impact stifles the replacement of older higher-polluting systems with newer, cleaner technologies. The new direction is towards incentive-based regulations instead of command and control programs. The SO₂ allowances under the Acid Rain Program or RECLAIM in the Los Angeles Basin are examples of incentive-based programs that have worked quite well. Most new programs are headed in this direction.

Technology Options for US Air Emission Compliance



In the United States, air emissions regulatory compliance requirements are technology driven. All new sources must demonstrate the use of emissions technology or methods that are BACT or LAER. These determinations are made on a case-by-case basis.

- BACT (Best Available Control Technology) is required in areas that are in "attainment" of the National Ambient Air Quality Standards (NAAQS).
- LAER (Lowest Achievable Emission Rate) is required in "non-attainment" areas that do not meet the NAAQS.

A BACT technology determination takes into account the cost-effectiveness of available emissions reductions. A LAER technology determination typically does not consider cost-effectiveness.

In non-attainment areas, permitted emissions must also be "offset," or matched by emissions reductions from another source.

In other words, the "required emission rate" for a new project actually depends on its location and its attainment status, which will establish the corresponding regulatory compliance requirements. A project's required emission rate will also be determined by the gas turbine application, along with the availability, cost, and performance of available emissions control alternatives available for that application.

The following tables provide a general survey of today's prevailing emissions technologies.

ATTAINMENT AREAS (REQUIRING BACT)		
GT Rated Output	Cogen/Combined Cycle	Peaking Gen/Mech Drive
< 15 MW	LPM (some OEMs may require SCR) or Xonon	LPM or Xonon
15-70 MW	LPM (some OEMs may require SCR) or Xonon	LPM with potential operating restrictions or Xonon
> 70 MW	LPM + SCR or Xonon	LPM with potential operating restrictions or Xonon



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NON-ATTAINMENT AREAS (REQUIRING LAER)		
GT Rated Output	Cogen/Combined Cycle	Peaking Gen/Mech Drive
< 15 MW	LPM + SCR or Xonon	LPM with potential operating restrictions or Xonon
15–70 MW	LPM + SCR or Xonon	LPM with potential operating restrictions or Xonon
> 70 MW	LPM + SCR or Xonon	LPM with potential operating restrictions or Xonon

Air emissions regulations are, by their nature, technology forcing and applicants may also propose greater emissions reductions to accelerate processing of their permits or to reduce the offset requirements. Therefore, today's prevailing emissions rates may not be adequate for tomorrow's projects.

Even where not strictly required, lower emissions can contribute economic value to a project through reduced offset requirements, fewer operating restrictions, greater siting flexibility, or accelerated plant startup through more rapid permitting.

In summary, technologies such as Xonon that offer lower emissions and/or lower compliance costs have potential value to projects.

Technology Options for New LAER/BACT Requirements



The New Requirements

Current US air regulations for new gas turbines are resulting in air permits in the range of 2 to 15 parts per million (ppm) NO_x for LAER requirements, and 9 to 25 ppm NO_x for BACT requirements. Recent actions by the EPA and state regulators in several areas of the US indicate that required NO_x levels are moving to the lower end of this range.

As air emission requirements tighten, new technologies will be required to meet them.

NO_x Control Options

There are two approaches to meeting the NO_x emission requirements of less than 9 ppm – one is to prevent NO_x formation, and the other is to clean it up in the exhaust. A pollution prevention technology, such as XononTM, is preferred because it minimizes production of NO_x within the combustor itself. Clean-up systems – selective catalytic reduction and SCONOX – are large, expensive units added to the gas turbine exhaust to remove already produced pollutants.

Feature	POLLUTION CLEAN-UP		POLLUTION PREVENTION
	LPM + SCR	LPM + SCONOX	Xonon
Emissions (ppm)	< 2.5	< 2.5	< 2.5
Environmental / Safety Impacts	Many	Some	None
Application Limitations	Some	Many	None
Cost Impact	High	Highest	Low
Proven in Practice	Yes	In process	In process

- **Selective Catalytic Reduction (SCR)**, a pollution clean-up technology, is applied to gas turbines that already incorporate a lean-premix (LPM)¹ combustion system. SCRs have been used successfully with gas turbines for years. However, they do cause many adverse environmental impacts.



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¹ LPM alone reduces NO_x levels to 9 to 25 ppm.

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SCRs use ammonia, a toxic and hazardous substance that requires special handling and permitting and results in ammonia slip (a toxic emission). The SCR catalyst contains toxic metals that must be disposed of as a hazardous waste. In addition, the high capital and operating costs of SCR units have made some new projects less feasible, and applications are limited to gas turbines operating within specific temperature ranges.

- **SCONOX**, a newer clean-up technology, is dependent on LPM and seems to have overcome some of the adverse environmental impacts of SCR since it doesn't use ammonia. At this time, however, information on SCONOX is limited. Environmental and safety impacts need to be clarified, and application limitations must be addressed – SCONOX can only be applied to gas fuel units with heat-recovery systems.
- **Xonon** is a pollution prevention technology proven to achieve less than 2.5 ppm NOx without producing any adverse environmental impacts. It eliminates the need for an SCR, SCONOX or other expensive clean-up system since it combusts natural gas at temperatures below that which NOx can form without impacting turbine performance. Xonon has demonstrated ultra-low NOx during programs with Allison, GE, Kawasaki and Solar; and a Xonon-equipped Kawasaki gas turbine is successfully operating at Silicon Valley Power.

Supporting New Technology

New technologies, such as Xonon, continue to be proven in practice and offer significant reductions in NOx emissions. The better economics of Xonon can also facilitate the financing of new power plants to replace older plants that are environmentally harmful and produce substantially higher levels of air emissions.

Air emission regulators can play a big part in the process of establishing new technologies. By working with users and manufacturers, regulators can facilitate the commercialization of new technologies, such as Xonon, by supporting the initial field trials required to validate performance and reliability.

The Xonon Impact on Hazardous Air Pollutants (HAPs)



Title III of the Clean Air Act Amendments of 1990 (CAAA) identified 189 toxic substances as hazardous air pollutants. Acute and chronic exposure to HAPs can lead to increased health risks such as cancer. The CAAA directed the EPA to identify the source categories for HAPs and gas turbines were identified as a source category. In most states, the application for an "Authorization to Construct" for a gas turbine must include an analysis of the impact on health risk from any HAPs anticipated from the turbine.

Xonon's HAPs Advantage

The XononTM combustion system can significantly reduce organic HAPs emissions from gas turbines. This is achieved by eliminating conditions where organic HAPs typically form.

- The Xonon combustor operates with a very uniform fuel-air mixture (typically $< \pm 2\%$). This in turn significantly reduces HAPs such as benzene, toluene and polyaromatic hydrocarbons that are produced from by-product chemistry in fuel-rich zones.
- The Xonon combustor also operates under leaner conditions than conventional lean-premix combustors. This reduces the amount of quenching required to achieve the desired turbine inlet temperature. Reduced quenching results in less formation of HAPs such as acetaldehyde, formaldehyde and acrolein.

Xonon for HAPs Emissions

Catalytica Combustion Systems, Inc. (CCSI) conducted a HAPs emission study to confirm Xonon's capability to achieve low HAPs emissions. CCSI used the following methodology to conduct the HAPs emissions test:

- Test methods were selected from the California Air Resources Board (CARB) database for gas turbine toxic emission tests (performed under the AB2588 Air Toxic Hot Spots program) to assure that the sampling and analytical procedures were sufficiently sensitive to detect levels found in prior toxic emission testing.
- Test samples were taken from the CCSI test facility.
- A qualified laboratory using standard analysis procedures analyzed the results.



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Results

The organic HAPs emissions measured from the Xonon combustor were significantly lower than emissions compared to gas turbine data from the CARB database. Formaldehyde emissions from Xonon were more than ten times lower than those of gas turbines listed in the CARB database, and all other organic HAPs emissions from Xonon were non-detectable.

Additionally, Catalytica performed a health risk assessment (HRA) comparing the test results with organic HAPs levels from the CARB database. The HRA was performed using a protocol developed by the California Air Pollution Control Officers Association (CAPCOA). This analysis concluded that the incremental health risk from a gas turbine using the Xonon combustion system is more than ten times better than that of similar turbines listed in the CARB database without Xonon.

Reducing CO₂ with Natural Gas-Fired Turbines



Coal: The Main Producer of CO₂

The Kyoto Summit called for the US to reduce CO₂ emissions to 7% below 1990 levels by the year 2012. CO₂ is produced by the combustion of fossil fuels that contain carbon. Because coal derives most of its energy from carbon, it is a primary producer of CO₂.

Natural Gas: An Alternative to Coal

As an alternative to burning coal, natural gas-fired turbines offer an excellent opportunity for reducing CO₂.

- Natural gas-fired turbines produced approximately 8% of the kilowatt-hours of electricity generated in the US in 1996.
- The US Department of Energy has projected that natural gas-fired turbines could produce more than half of the world's power within the next 20 years.

Kyoto Accord Compliance Options

If conversion of coal plants to natural gas-fired turbines were the only action taken to comply with the Kyoto Accord, changing to high efficiency gas turbine systems would dramatically reduce the percentage of coal plants that would have to be converted. The table below shows this comparison.

COMPLIANCE OPTIONS		COAL PLANT CONVERSION NEEDED TO MEET KYOTO ACCORD
From	To	
Coal Steam Plant	Natural Gas Steam Plant	45%
Coal Steam Plant	Gas Turbine Combined Cycle	28%
Coal Steam Plant	Gas Turbine Cogeneration	26%

Supporting Natural Gas-Fired Turbines

Within the increasingly stringent regulatory environment, an important new technology has emerged to accelerate the trend toward the efficient use of natural gas-fueled turbines.

CCSI's breakthrough Xonon[™] combustion system is the first technology to virtually eliminate emissions of oxides of nitrogen (NO_x) to less than 2.5 parts per million. It provides both environmental and economic benefits to both gas turbine manufacturers and power generators since it expedites permitting, eliminates expensive exhaust clean-up systems, has no impact on operating performance and avoids adverse environmental impacts.

APPENDIX D

CRITERIA AND TOXIC POLLUTANT INFORMATION



Guidance for Power Plant Siting and Best Available Control Technology

As Approved by the Air Resources Board on July 22, 1999

**Stationary Source Division
Issued September 1999**



- area attainment status,
- gas turbine exhaust gas temperature for simple-cycle power plant configuration (for example, use of aeroderived versus industrial frame gas turbine), and
- use and function of gas turbine.

It is the responsibility of the permitting agency to make its own BACT determination for the class and category of gas turbine application. The BACT emission levels are intended to apply to the emission concentrations as exhausted from the stacks. Summaries of information and findings utilized in assessing BACT for gas turbine emissions follow the tables. Supporting material is presented in Appendix C.

Table III-1: Summary of BACT for the Control of Emissions from Stationary Gas Turbines Used for Simple-Cycle Power Plant Configurations

NO _x	CO	VOC	PM ₁₀	SO _x
5 ppmvd @ 15% O ₂ , 3-hour rolling average	6 ppmvd @ 15% O ₂ , 3-hour rolling average	2 ppmvd @ 15% O ₂ , 3-hour rolling average OR 0.0027 pounds per MMBtu (based on higher heating value)	An emission limit corresponding to natural gas with fuel sulfur content of no more than 1 grain/100 scf	An emission limit corresponding to natural gas with fuel sulfur content of no more than 1 grain/100 scf (no more than 0.55 ppmvd @ 15% O ₂)



Toxics Emission Factors from Combustion Process

Table I- EF FOR NATURAL GAS COMBUSTION (LB / MMCF)

<i>EXTERNAL COMBUSTION *</i>					
<u>POLLUTANT</u>	<u>CAS NO.</u>	<u><10 MMBTUH</u>	<u>10-100 MMBTUH</u>	<u>>100 MMBTUH</u>	<u>FLARE</u>
Benzene	71432	0.008	0.0058	0.0017	0.1152
Formaldehyde	50000	0.017	0.0123	0.0036	1.1376
PAH'S **	1151	0.0004	0.0004	0.0004	0.0273
Naphthalene	91203	0.0003	0.0003	0.0003	N/A
Acetaldehyde	75070	0.0043	0.0031	0.0009	0.1138
Acrolein	107028	0.0027	0.0027	0.0008	0.0114
Propylene	115071	0.731	0.53	0.01553	2.016
Toluene	108883	0.0366	0.0265	0.0078	0.0576
Xylenes	1210	0.0272	0.0197	0.0058	0.0576
Ethylbenzene	100414	0.0095	0.0069	0.002	N/A
Hexane	110543	0.0063	0.0046	0.0013	N/A
<i>INTERNAL COMBUSTION</i>					
<u>POLLUTANT</u>	<u>CAS NO.</u>	<u>< 1000 HP</u>	<u>> 1000 HP</u>	<u>TURBINE</u>	
Benzene	71432	3.257	3.9084	0.0113	
Formaldehyde	50000	32.4963	38.9956	0.094	
PAH'S **	1151	0.1964	0.1964	0.001	
Naphthalene	91203	0.1785	0.1785	0.0008	
Acetaldehyde	75070	0.944	1.1328	0.037	
Acrolein	107028	0.3783	0.454	0.009	
Propylene	115071	16.2259	19.4711	1.0522	
Toluene	108883	1.1145	1.3374	0.0726	
Xylenes	1210	0.4048	0.4858	0.0298	
Hexane	115043	0.7491	0.8989	1.75	
Ethylbenzene	100414	0.3257	0.3908	0.0132	

AP-42

Table 3.1-1. EMISSION FACTORS FOR NITROGEN OXIDES (NO_x) AND CARBON MONOXIDE (CO) FROM STATIONARY GAS TURBINES

Emission Factors ^a				
Turbine Type	Nitrogen Oxides		Carbon Monoxide	
Natural Gas-Fired Turbines ^b	(lb/MMBtu) ^c (Fuel Input)	Emission Factor Rating	(lb/MMBtu) ^c (Fuel Input)	Emission Factor Rating
Uncontrolled	3.2 E-01	A	8.2 E-02 ^d	A
Water-Steam Injection	1.3 E-01	A	3.0 E-02	A
Lean-Premix	9.9 E-02	D	1.5 E-02	D
Distillate Oil-Fired Turbines ^e	(lb/MMBtu) ^f (Fuel Input)	Emission Factor Rating	(lb/MMBtu) ^f (Fuel Input)	Emission Factor Rating
Uncontrolled	8.8 E-01	C	3.3 E-03	C
Water-Steam Injection	2.4 E-01	B	7.6 E-02	C
Landfill Gas-Fired Turbines ^g	(lb/MMBtu) ^h (Fuel Input)	Emission Factor Rating	(lb/MMBtu) ^h (Fuel Input)	Emission Factor Rating
Uncontrolled	1.4 E-01	A	4.4 E-01	A
Digester Gas-Fired Turbines ^j	(lb/MMBtu) ^k (Fuel Input)	Emission Factor Rating	(lb/MMBtu) ^k (Fuel Input)	Emission Factor Rating
Uncontrolled	1.6 E-01	D	1.7 E-02	D

^a Factors are derived from units operating at high loads (≥ 80 percent load) only. For information on units operating at other loads, consult the background report for this chapter (Reference 16), available at "www.epa.gov/ttn/chief".

^b Source Classification Codes (SCCs) for natural gas-fired turbines include 2-01-002-01, 2-02-002-01, 2-02-002-03, 2-03-002-02, and 2-03-002-03. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value.

^c Emission factors based on an average natural gas heating value (HHV) of 1020 Btu/scf at 60°F. To convert from (lb/MMBtu) to (lb/10⁶ scf), multiply by 1020.

^d It is recognized that the uncontrolled emission factor for CO is higher than the water-steam injection and lean-premix emission factors, which is contrary to expectation. The EPA could not identify the reason for this behavior, except that the data sets used for developing these factors are different.

^e SCCs for distillate oil-fired turbines include 2-01-001-01, 2-02-001-01, 2-02-001-03, and 2-03-001-02.

^f Emission factors based on an average distillate oil heating value of 139 MMBtu/10³ gallons. To convert from (lb/MMBtu) to (lb/10³ gallons), multiply by 139.

^g SCC for landfill gas-fired turbines is 2-03-008-01.

^h Emission factors based on an average landfill gas heating value of 400 Btu/scf at 60°F. To convert from (lb/MMBtu), to (lb/10⁶ scf) multiply by 400.

^j SCC for digester gas-fired turbine is 2-03-007-01.

^k Emission factors based on an average digester gas heating value of 600 Btu/scf at 60°F. To convert from (lb/MMBtu) to (lb/10⁶ scf) multiply by 600.

AP-42

Table 3.1-2a. EMISSION FACTORS FOR CRITERIA POLLUTANTS AND GREENHOUSE GASES FROM STATIONARY GAS TURBINES

Emission Factors ^a - Uncontrolled				
Pollutant	Natural Gas-Fired Turbines ^b		Distillate Oil-Fired Turbines ^d	
	(lb/MMBtu) ^c (Fuel Input)	Emission Factor Rating	(lb/MMBtu) ^c (Fuel Input)	Emission Factor Rating
CO ₂ ^f	110	A	157	A
N ₂ O	0.003 ^g	E	ND	NA
Lead	ND	NA	1.4 E-05	C
SO ₂	0.94S ^h	B	1.01S ^h	B
Methane	8.6 E-03	C	ND	NA
VOC	2.1 E-03	D	4.1 E-04 ^j	E
TOC ^k	1.1 E-02	B	4.0 E-03 ^l	C
PM (condensable)	4.7 E-03 ^l	C	7.2 E-03 ^l	C
PM (filterable)	1.9 E-03 ^l	C	4.3 E-03 ^l	C
PM (total)	6.6 E-03 ^l	C	1.2 E-02 ^l	C

^a Factors are derived from units operating at high loads (>80 percent load) only. For information on units operating at other loads, consult the background report for this chapter (Reference 16), available at "www.epa.gov/ttn/chief". ND = No Data, NA = Not Applicable.

^b SCCs for natural gas-fired turbines include 2-01-002-01, 2-02-002-01 & 03, and 2-03-002-02 & 03.

^c Emission factors based on an average natural gas heating value (HHV) of 1020 Btu/scf at 60°F. To convert from (lb/MMBtu) to (lb/10⁶ scf), multiply by 1020. Similarly, these emission factors can be converted to other natural gas heating values.

^d SCCs for distillate oil-fired turbines are 2-01-001-01, 2-02-001-01, 2-02-001-03, and 2-03-001-02.

^e Emission factors based on an average distillate oil heating value of 139 MMBtu/10³ gallons. To convert from (lb/MMBtu) to (lb/10³ gallons), multiply by 139.

^f Based on 99.5% conversion of fuel carbon to CO₂ for natural gas and 99% conversion of fuel carbon to CO₂ for distillate oil. CO₂ (Natural Gas) [lb/MMBtu] = (0.0036 scf/Btu)(%CON)(C)(D), where %CON = weight percent conversion of fuel carbon to CO₂, C = carbon content of fuel by weight, and D = density of fuel. For natural gas, C is assumed at 75%, and D is assumed at 4.1 E+04 lb/10⁶scf. For distillate oil, CO₂ (Distillate Oil) [lb/MMBtu] = (26.4 gal/MMBtu) (%CON)(C)(D), where C is assumed at 87%, and the D is assumed at 6.9 lb/gallon.

^g Emission factor is carried over from the previous revision to AP-42 (Supplement B, October 1996) and is based on limited source tests on a single turbine with water-steam injection (Reference 5).

^h All sulfur in the fuel is assumed to be converted to SO₂. S = percent sulfur in fuel. Example, if sulfur content in the fuel is 3.4 percent, then S = 3.4. If S is not available, use 3.4 E-03 lb/MMBtu for natural gas turbines, and 3.3 E-02 lb/MMBtu for distillate oil turbines (the equations are more accurate).

^j VOC emissions are assumed equal to the sum of organic emissions.

^k Pollutant referenced as THC in the gathered emission tests. It is assumed as TOC, because it is based on EPA Test Method 25A.

^l Emission factors are based on combustion turbines using water-steam injection.

CASE # 209
AMBIENT
DB, °F 53.0
WB, °F 51.3
RH, % 60.0
ALT, FT 1600
ENGINE INLET
TEMP, °F 59.0
RH, % 60.0
CONDITIONING NONE
TONS or kBTU 0

KW, GEN TERM 10464
Btu/KW-hr, LHV 11113

FUEL
MMBtu/hr, LHV 115.3
lb/hr 6,130

NOZZLE WATER
lb/hr 0
°F 0

COMPRESSOR STEAM
lb/hr 0
°F 0

INLET LOSS, InH2O 4.00
EXHAUST LOSS, InH2O 4.00

PT SPEED, rpm 0
COMP DISCH, psia 219.2
COMP DISCH, °F 775

GEARBOX EFF 0.99
GENERATOR EFF 0.976

EXHAUST PARAMETERS
°F 928
lb/s 98.8
lb/hr 355680
Cp Btu/lb-R 0.2722

EMISSIONS (NOT FOR USE IN ENVIRONMENTAL PERMITS, Ref. @ 15% O2)

NOx, ppmvd 25
NOx, lb/hr 12
CO, ppmvd 20
CO, lb/hr 7

EXH WGT % WET (NOT FOR USE IN ENVIRONMENTAL PERMITS)

AR 1.3162
N2 73.8766
O2 16.3192
CO2 4.4426
H2O 4.0349

EXH MOLE % DRY (NOT FOR USE IN ENVIRONMENTAL PERMITS)

AR 1.0042
N2 80.3760
O2 15.5432
CO2 3.0766
H2O 0.0000

Gas Turbine Emissions

Ratings

Input Rating (MMBtu/hr):	465.2
Average hours of operation per day:	8
Average days of operation per week:	5
Average weeks of operation per year:	30
Average Loading (%):	95
Maximum hours of operation per day:	24
Maximum days of operation per month:	30
Maximum weeks of operation per year:	52
Maximum days per week:	7
Maximum Annual Hours	1785

Legend

U-EF	Emission Factor for uncontrolled emissions
C-EF	Net emission factor for controlled emissions
AHU	Average hourly uncontrolled emissions
AHC	Average hourly controlled emissions
MHU	Maximum hourly uncontrolled emissions
MHC	Maximum hourly controlled emissions
MDU	Maximum daily uncontrolled emissions
MDC	Maximum daily controlled emissions
AA	Annual average controlled emissions
APTE	Annual potential to emit
30DA	Thirty day average daily emissions

	U-EF (lb/MMBtu)	C-EF (lb/MMBtu)	AHU (lb/hr)	AHC (lb/hr)	MHU (lb/hr)	MHC (lb/hr)	MDU (lb/day)	MDC (lb/day)	AA (lb/yr)	APTE (tons/yr)	30DA (lb/day)
ROG	0.0030	0.0030	1.33	1.33	1.40	1.40	33.5	33.5	2367	1.25	33.5
UNROG	0.0089	0.0089	3.93	3.93	4.14	4.14	0.0	99.4	7021	3.70	99.4
SOx	0.0034	0.0034	1.50	1.50	1.58	1.58	38.0	38.0	2682	1.41	38.0
CO	0.0248	0.0248	10.96	10.96	11.54	11.54	276.9	276.9	19564	10.30	276.9
PM10	0.0066	0.0066	2.92	2.92	3.07	3.07	73.7	73.7	5206	2.74	73.7
NOx	0.0240	0.0240	10.62	10.62	11.18	11.18	268.4	268.4	18962	9.98	268.4

Emission Rate Source

ROG	CARB 1999 BACT guidance - Table I (.0027 lb/mmBTUhhv)
SOx	AP42
CO	10 ppmv Vendor Guarantee
PM10	AP42
NOx	5 ppmv 1999 CARB BACT guidance

Gas Turbine Emissions

Ratings			Legend	
Input Rating (MMBtu/hr):	465.2	U-EF	Emission Factor for uncontrolled emissions	
Average hours of operation per day:	5	C-EF	Net emission factor for controlled emissions	
Average days of operation per week:	5	AHU	Average hourly uncontrolled emissions	
Average weeks of operation per year:	17	AHC	Average hourly controlled emissions	
Average Loading (%):	95	MHU	Maximum hourly uncontrolled emissions	
Maximum hours of operation per day:	24	MHC	Maximum hourly controlled emissions	
Maximum days of operation per month:	30	MDU	Maximum daily uncontrolled emissions	
Maximum weeks of operation per year:	52	MDC	Maximum daily controlled emissions	
Maximum days per week:	7	AA	Annual average controlled emissions	
Maximum Annual Hours	423	APTE	Annual potential to emit	
		30DA	Thirty day average daily emissions	

	U-EF (lb/MMBtu)	C-EF (lb/MMBtu)	AHU (lb/hr)	AHC (lb/hr)	MHU (lb/hr)	MHC (lb/hr)	MDU (lb/day)	MDC (lb/day)	AA (lb/yr)	APTE (tons/yr)	30DA (lb/day)
ROG	0.0030	0.0030	1.33	1.33	1.40	1.40	33.5	33.5	561	0.30	33.5
UNROG	0.0089	0.0089	3.93	3.93	4.14	4.14	0.0	99.4	1664	0.88	99.4
SOx	0.0034	0.0034	1.50	1.50	1.58	1.58	38.0	38.0	636	0.33	38.0
CO	0.0495	0.0495	21.88	21.88	23.03	23.03	552.7	552.7	9254	4.87	552.7
PM10	0.0066	0.0066	2.92	2.92	3.07	3.07	73.7	73.7	1234	0.65	73.7
NOx	0.1016	0.1016	44.89	44.89	47.25	47.25	1134.0	1134.0	18987	9.99	1134.0

Emission Rate Source

ROG	CARB 1999 BACT guidance - Table I (.0027 lb/mmBTUhhv)
SOx	AP42
CO	20 ppmv Guarantee
PM10	AP42
NOx	25 ppmv guarantee

Gas Turbine Emissions

Ratings			Legend	
Input Rating (MMBtu/hr):	116.3	U-EF	Emission Factor for uncontrolled emissions	
Average hours of operation per day:	8	C-EF	Net emission factor for controlled emissions	
Average days of operation per week:	5	AHU	Average hourly uncontrolled emissions	
Average weeks of operation per year:	30	AHC	Average hourly controlled emissions	
Average Loading (%):	95	MHU	Maximum hourly uncontrolled emissions	
Maximum hours of operation per day:	24	MHC	Maximum hourly controlled emissions	
Maximum days of operation per month:	30	MDU	Maximum daily uncontrolled emissions	
Maximum weeks of operation per year:	52	MDC	Maximum daily controlled emissions	
Maximum days per week:	7	AA	Annual average controlled emissions	
Maximum Annual Hours	1785	APTE	Annual potential to emit	
		30DA	Thirty day average daily emissions	

	U-EF (lb/MMBtu)	C-EF (lb/MMBtu)	AHU (lb/hr)	AHC (lb/hr)	MHU (lb/hr)	MHC (lb/hr)	MDU (lb/day)	MDC (lb/day)	AA (lb/yr)	APTE (tons/yr)	30DA (lb/day)
ROG	0.0030	0.0030	0.3315	0.3315	0.3489	0.3489	8.4	8.4	592	0.31	8.4
UNROG	0.0089	0.0089	0.98	0.98	1.04	1.04	0.0	24.8	1755	0.92	24.8
SOx	0.0034	0.0034	0.3756	0.3756	0.3954	0.3954	9.5	9.5	671	0.35	9.5
CO	0.0248	0.0248	2.7400	2.7400	2.8842	2.8842	69.2	69.2	4891	2.57	69.2
PM10	0.0066	0.0066	0.7292	0.7292	0.7676	0.7676	18.4	18.4	1302	0.69	18.4
NOx	0.0240	0.0240	2.6557	2.6557	2.796	2.796	67.1	67.1	4740	2.49	67.1

Emission Rate Source

ROG	CARB 1999 BACT guidance - Table I (.0027 lb/mmBTUhhv)
SOx	AP42
CO	10 ppmv Vendor Guarantee
PM10	AP42
NOx	5 ppmv 1999 CARB BACT guidance

Gas Turbine Emissions

Ratings

Input Rating (MMBtu/hr):	116.3
Average hours of operation per day:	5
Average days of operation per week:	5
Average weeks of operation per year:	17
Average Loading (%):	95
Maximum hours of operation per day:	24
Maximum days of operation per month:	30
Maximum weeks of operation per year:	52
Maximum days per week:	7
Maximum Annual Hours	423

Legend

U-EF	Emission Factor for uncontrolled emissions
C-EF	Net emission factor for controlled emissions
AHU	Average hourly uncontrolled emissions
AHC	Average hourly controlled emissions
MHU	Maximum hourly uncontrolled emissions
MHC	Maximum hourly controlled emissions
MDU	Maximum daily uncontrolled emissions
MDC	Maximum daily controlled emissions
AA	Annual average controlled emissions
APTE	Annual potential to emit
30DA	Thirty day average daily emissions

	U-EF (lb/MMBtu)	C-EF (lb/MMBtu)	AHU (lb/hr)	AHC (lb/hr)	MHU (lb/hr)	MHC (lb/hr)	MDU (lb/day)	MDC (lb/day)	AA (lb/yr)	APTE (tons/yr)	30DA (lb/day)
ROG	0.0030	0.0030	0.33	0.33	0.35	0.35	8.4	8.4	140	0.07	8.4
UNROG	0.0089	0.0089	0.98	0.98	1.04	1.04	0.0	24.8	416	0.22	24.8
SO_x	0.0034	0.0034	0.38	0.38	0.40	0.40	9.5	9.5	159	0.08	9.5
CO	0.0495	0.0495	5.47	5.47	5.76	5.76	138.2	138.2	2313	1.22	138.2
PM₁₀	0.0066	0.0066	0.73	0.73	0.77	0.77	18.4	18.4	308	0.16	18.4
NO_x	0.1016	0.1016	11.22	11.22	11.81	11.81	283.5	283.5	4747	2.50	283.5

Emission Rate Source

ROG	CARB 1999 BACT guidance - Table I (.0027 lb/mmBTUhhv)
SO _x	AP42
CO	20 ppmv Guarantee
PM ₁₀	AP42
NO _x	25 ppmv guarantee

Calc of NOx Mass Emissions (lb/hr)

- ① From NOx conc @ stack conditions (15.54% O₂)
Using fuel throughput & F Factor.

$$\begin{aligned}\text{NOx lb/MMBTU} &= \text{ppm} \times \text{MW} \times 2.59 \times 10^{-9} \times F_d \times (20.9 / (20.9 - \% \text{O}_2)) \\ &= 22.698 \times 46.01 \times 2.59 \times 10^{-9} \times 3710 \times (20.9 / (20.9 - 15.5432)) \\ &= 0.0919\end{aligned}$$

$$\begin{aligned}\text{NOx lb/hr} &= \text{lb/MMBTU} \times \text{MMBTU/hr (HHV)} \\ &= 0.0919 \times 128,72 \\ &= 11.832\end{aligned}$$

- ② From NOx conc @ stack conditions (15.54% O₂) Using calculated air flow

$$\begin{aligned}\text{NOx lb/hr} &= \text{ppm} \times \text{MW} \times 1.557 \times 10^{-7} \times \text{DSCFM} \\ &= 22.698 \times 46.01 \times 1.557 \times 10^{-7} \times 72,964.1 \\ &= 11.855\end{aligned}$$

- ③ From RECLAIM Emission Factors

$$\text{NOx } 25 \text{ ppm @ } 15\% \text{ O}_2 \times \frac{1}{0.26 \text{ lb/MMSCF}} = 96.15 \text{ lb/MMSCF}$$

$$\text{NOx } 96.15 \text{ lb/MMSCF} \times 0.1229 \text{ MMCF/hr} = 11.812 \text{ lb/hr}$$

Calc of Exhaust Flow (DSCFM)

① From Given lb/hr of Exhaust

$$\text{lb/hr} = \text{ppm} \times \text{MW} \times 1.557 \times 10^{-7} \times \text{DSCFM}$$

$$\text{DSCFM} = \text{lb/hr} / (\text{MW} \times 1.557 \times 10^{-7} \times \text{ppm})$$

$$\text{(Wet) lb/hr} = 355,680$$

$$\text{MW} = 29.234 \text{ lb/lb-mole}$$

$$\text{ppm} = 1 \times 10^6 \frac{\text{mole}}{\text{mole}}$$

$$\text{SCFM} = 355,680 / (29.234 \times 1 \times 10^6 \times 1.557 \times 10^{-7})$$

$$\text{SCFM} = 78,141.7$$

(Actual O₂)

② From Given Heat Input @ 116.3 MMBTU/hr (LHV)

$$\frac{116.3 \text{ MMBTU/hr}}{946 \text{ BTU/CF}} = 0.1229 \text{ MMCF/hr}$$

$$0.1229 \text{ MMCF/hr} \times 1047 = 128.72 \text{ MMBTU/hr (HHV)}$$

$$\text{DSCFM} = \text{MMBTU/hr} \times \frac{\text{DSCF}}{\text{MMBTU}} \times \left(\frac{20.9}{20.9 - \%O_2} \right) \times \frac{1 \text{ hr}}{60 \text{ min}}$$

$$= 128.72 \times 3710 \times \left(\frac{20.9}{20.9 - 15.5432} \right) \times \frac{1}{60}$$

$$\text{DSCFM} = 72,904.4$$

③ From Given NO_x lb/hr = 12, NO_x @ 15% O₂ = 25 ppm

$$\text{NO}_x @ 15.54 \text{ (Actual Stack O}_2\text{)} = 22.698 \text{ ppm}$$

$$\text{DSCFM} = \text{lb/hr} / (\text{MW} \times 1.557 \times 10^{-7} \times \text{ppm})$$

$$\text{DSCFM} = 12 / (46.01 \times 1.557 \times 10^{-7} \times 22.698)$$

$$\text{DSCFM} = 73,799.4$$

* Scenario #2 (Heat Input) is best estimate.
Scenario #3 very close (1.2%). Diff likely due to rounding or
Nox lb/hr (12.?)

Scenario #1 - Believe (lb/hr is wet) Assume (6.5% moisture)

$$\#1 = 73,062.5 \text{ DSCFM} = 0.2\% \text{ diff}$$

Calc of Exhaust Flow (ACFM)

$$SCFM = DSCFM \times \left(\frac{T_S}{T_{STD}} \right) \times \left(\frac{P_S}{P_{STD}} \right)$$

$$SCFM = 72,904.4 \times \left(\frac{1388}{528} \right) \times \left(\frac{29.127}{29.92} \right)$$

$$SCFM = 186,567.3$$

$$ACFM = SCFM / \left(1 - \frac{9.5 H_2O}{100} \right)$$

$$ACFM = 186,567.3 / \left(1 - \left(\frac{9.5}{100} \right) \right)$$

$$ACFM = 199,537.2$$

$$\begin{aligned} \text{Assume } P_S &= P_{BAR} + P_{STATIC} \\ &= 29.2 - 0.073 \\ &= 29.127 \end{aligned}$$

(Static Pressure = -1.0 in wg)
($P_{BAR} = 29.2$ in Hg)

APPENDIX E

AMBIENT AIR QUALITY IMPACT ANALYSIS AND SCREENING RISK ASSESSMENT INFORMATION

SCAQMD Rule 1401 - Tier 3 Screening Analysis
Alliance Power, Inc. - Drew Substation
Gas Turbine Generator

Screening Parameters:

X/Q ($\mu\text{g}/\text{m}^3$)/(annual)	X/Q ($\mu\text{g}/\text{m}^3$)/(hourly)	MET	LEA
0.5927	4.8666	1	1.00

Emission Calculations:

Compound	Emission Parameters				X/Q ($\mu\text{g}/\text{m}^3$)/(annual)	X/Q ($\mu\text{g}/\text{m}^3$)/(hourly)
	(lb/hr)	(lb/yr)	(ton/yr)	(g/sec)		
Acetaldehyde	0.00410	35.90	0.01795	0.00052	0.00031	0.00252
Acrolein	0.00100	8.73	0.00437	0.00013	0.00007	0.00061
Benzene	0.00125	10.96	0.00548	0.00016	0.00009	0.00077
Formaldehyde	0.01041	91.21	0.04560	0.00131	0.00078	0.00639
PAHs *	0.00011	0.97	0.00049	0.00001	0.00001	0.00007
Toluene	0.00804	70.44	0.03522	0.00101	0.00060	0.00494
Xylene	0.00330	28.91	0.01446	0.00042	0.00025	0.00203

Tier 3 Screening Analysis:

Compound	Maximum Individual Cancer Risk (MICR)			Chronic Hazard Index (HIC)				Acute Parameters		
	Unit Risk	MP	MICR	REL	MP	X/Q	HIC	REL	X/Q	HIA
	Factor	Factor		Factor	Factor	(µg/m³)/(annual)		Factor	(µg/m³)/(hourly)	
Acetaldehyde	2.70E-06	1.0	8.27E-10	9.00E+00	1.0	0.00031	0.00003	n/a	n/a	n/a
Acrolein	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1.90E-02	0.00061	0.03220
Benzene	2.90E-05	1.0	2.71E-09	6.00E+00	1.0	0.00009	0.000016	1.30E+03	0.00077	0.00000
Formaldehyde	6.00E-06	1.0	4.67E-09	3.00E+00	1.0	0.00078	0.000259	9.40E-02	0.00639	0.06798
PAHs *	1.70E-03	12.7	1.79E-07	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Toluene	n/a	n/a	n/a	3.00E+02	1.0	0.00060	0.000002	3.70E+04	0.00494	0.00000
Xylene	n/a	n/a	n/a	7.00E+02	1.0	0.00025	0.000000	2.20E+04	0.00203	0.00000
Total MICR:			1.87E-07	HIC:			0.00031	HIA: 0.10018		

Notes:

- Benzene uses an HAI adjustment factor of 0.88 to reflect its 6-hour average period.

Table 1-A
Air Quality Impact Analysis
500 Hrs/Yr, 45' Stack, 25 ppm NOx
Alliance Power, Inc. - Drew Substation
March, 2001

Modeling Results:

1st Max =	4.8353	(ug/m ³)/(g/sec)	1 - Hour Average Concentration
1st Max =	3.1703	(ug/m ³)/(g/sec)	8 - Hour Average Concentration
1st Max =	1.4918	(ug/m ³)/(g/sec)	24 - Hour Average Concentration
1st Max =	0.0122	(ug/m ³)/(g/sec)	Annual Average Concentration (500 hours/year)

Air Quality Impact Analysis:

Pollutant	Averaging Time	Emission Rate (g/sec)	Maximum Impact (ug/m ³)	SCAQMD / NSR Allowable Significant Change (ug/m ³)
NO _x	1 - Hour	1.49	7.2	20.0
NO _x	Annual	1.06	0.01	1.0
CO	1 - Hour	0.88	4.3	1100.0
CO	8 - Hour	0.88	2.8	500.0
PM	24 - Hour	0.10	0.1	2.5
PM ₁₀	Annual	0.10	0.001	1.0

Note:

- X/Q Max values (ug/m³/g/sec) are taken from the ISC 3 model.
- Impacts analysis utilized the standard stack release parameters.
- NOx 25 ppm
- Annual Operations: 500 Hours/Scaled
- June through October Operations
- 45' Stack Height
- 1 Gas Turbine

Table 1-B
Air Quality Impact Analysis
500 Hrs/Yr, 45' Stack, 25 ppm NO_x
Alliance Power, Inc. - Drew Substation
March, 2001

Equipment Information:

Equipment Type: Gas Turbine	Capacity: -	Fuel: Natural Gas
Manufacturer: GE	Output (MW): 10.25	HHV:
Model: PGT 10B1		

Emission Rates:

Pollutant		Emission Rate (lbs/hr)	Emission Rate (g/s)		Comments
NO _x		11.8	1.49		NO _x : 25ppm NO _x Annual is a ratio of 0.71 (Total NO ₂ to Total NO _x)
NO _x (Annual)		8.4	1.06		
CO		7.0	0.88		
PM		0.8	0.10		
PM ₁₀		0.8	0.10		

Notes:

- NO_x 25 ppm
- Annual Operations: 500 Hours
- June through October Operations
- 45' Stack Height
- 1 Gas Turbine

Table 2-A
Air Quality Impact Analysis
8760 Hrs/Yr, 45' Stack, 5 ppm NO_x
Alliance Power, Inc. - Drew Substation
February, 2001

Modeling Results:

1st Max =	4.8666	(ug/m ³)/(g/sec)	1 - Hour Average Concentration
1st Max =	3.8490	(ug/m ³)/(g/sec)	8 - Hour Average Concentration
1st Max =	2.0182	(ug/m ³)/(g/sec)	24 - Hour Average Concentration
1st Max =	0.5927	(ug/m ³)/(g/sec)	Annual Average Concentration (8760 hours/year)

Air Quality Impact Analysis:

Pollutant	Averaging Time	Emission Rate (g/sec)	Maximum Impact (ug/m ³)	SCAQMD / NSR Allowable Significant Change (ug/m ³)
NO _x	1 - Hour	0.30	1.47	20.0
NO _x	Annual	0.21	0.13	1.0
CO	1 - Hour	0.88	4.3	1100.0
CO	8 - Hour	0.88	3.4	500.0
PM	24 - Hour	0.10	0.2	2.5
PM ₁₀	Annual	0.10	0.06	1.0

Note:

- X/Q Max values (ug/m³/g/sec) are taken from the ISC 3 model.
- Impacts analysis utilized the standard stack release parameters.
- NO_x 5 ppm
- Annual Operations: 8760 Hours/Unscaled
- 45' Stack Height
- 1 Gas Turbine

Table 2-B
Air Quality Impact Analysis
8760 Hrs/Yr, 45' Stack, 5 ppm NO_x
Alliance Power, Inc. - Drew Substation
February, 2001

Equipment Information:

Equipment Type: Gas Turbine	Capacity: -	Fuel: Natural Gas
Manufacturer: GE	Output (MW): 10.25	HHV:
Model: PGT 10B1		

Emission Rates:

Pollutant	Emission Rate (lbs/hr)	Emission Rate (g/s)	Comments
NO _x	2.4	0.30	NO _x : 5ppm
NO _x (Annual)	1.7	0.21	NO _x Annual is a ratio of 0.71 (Total NO ₂ to Total NO _x)
CO	7.0	0.88	
PM	0.8	0.10	
PM ₁₀	0.8	0.10	

Notes:

- NO_x 5 ppm
- Annual Operations: 8760 Hours
- 45' Stack Height
- 1 Gas Turbine

1

ISCST3 - (DATED 00101)

ISCST3X PC (32 BIT) VERSION 3.4.0
(C) COPYRIGHT 1991-2000, TRINITY CONSULTANTS

Run Began on 3/07/2001 at 7:37:19

** BREEZE ISC SUITE v3.4.2 - C:\TRINITY\ISC32\AllianceDrew1.dat
** T3, Dallas, TX

CO STARTING
CO TITLEONE Alliance Power, Inc.
CO TITLETWO Drew Substation (1-Hour, 8-Hour, 24-Hour)
CO MODELOPT CONC URBAN NOCALM
CO AVERTIME 1 6 24
CO POLLUTID OTHER
CO TERRHGT5 FLAT
CO RUNORNOT RUN
CO FINISHED

SO STARTING
SO ELEVUNIT METERS
SO LOCATION SRC1 POINT 0.0 0.0 0
SO SRCPARAM SRC1 1.000000E+00 13.716 770.9276 20.78486 2.401824
SO EMISFACT SRC1 MONTH 0.0 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0 1.0
SO EMISFACT SRC1 MONTH 0.0 0.0
SO SRCGROUP ALL
SO FINISHED

Notes:

- 1 hour, 8 hour, 24 hour only
- Flat Terrain, NO Calm, Urban
- Monthly Emission Factor Adjustments
- Emission Rate Normalized @ 1.0 g/s

*** ISCST3 - VERSION 00101 ***

*** Alliance Power, Inc.

03/07/01

*** Drew Substation (1-Hour, 8-Hour, 24-Hour)

07:37:21

**MODELOPTs:

CONC

URBAN FLAT

NOCALM

PAGE 437

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3

**

GROUP ID		AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR	(XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	4.83532	ON 81101306: AT (-2000.00,	1000.00,	0.00,	0.00) DC NA
	HIGH 2ND HIGH VALUE IS	4.81025	ON 81092705: AT (-2000.00,	1200.00,	0.00,	0.00) DC NA
	HIGH 3RD HIGH VALUE IS	4.80711	ON 81080206: AT (-2000.00,	1200.00,	0.00,	0.00) DC NA
	HIGH 4TH HIGH VALUE IS	4.80363	ON 81080104: AT (-2000.00,	1200.00,	0.00,	0.00) DC NA
	HIGH 5TH HIGH VALUE IS	4.80047	ON 81061403: AT (-2000.00,	1200.00,	0.00,	0.00) DC NA

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** ISCST3 - VERSION 00101 ***

*** Alliance Power, Inc.

03/07/

*** Drew Substation (1-Hour, 8-Hour, 24-Hour)

07:3

**MODELOPTs:

CONC

URBAN FLAT

NOCALM

PAGE 000

*** THE SUMMARY OF HIGHEST 8-HR RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3

**

GROUP ID		AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR	(XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	3.17025	ON 81080808: AT (-1900.00,	600.00,	0.00,	0.00) DC NA
	HIGH 2ND HIGH VALUE IS	2.91545	ON 81080808: AT (-1900.00,	700.00,	0.00,	0.00) DC NA
	HIGH 3RD HIGH VALUE IS	2.87560	ON 81091008: AT (-1800.00,	600.00,	0.00,	0.00) DC NA
	HIGH 4TH HIGH VALUE IS	2.81886	ON 81102408: AT (-2000.00,	700.00,	0.00,	0.00) DC NA
	HIGH 5TH HIGH VALUE IS	2.73801	ON 81102408: AT (-1900.00,	700.00,	0.00,	0.00) DC NA

*** RECEPTOR TYPES: GC = GRIDCART

GP = GRIDPOLR

DC = DISCCART

DP = DISCPOLR

BD = BOUNDARY

*** ISCST3 - VERSION 00101 ***

*** Alliance Power, Inc.

*** 03/07/01
07:37:21
PAGE 439

*** Drew Substation (1-Hour, 8-Hour, 24-Hour)

**MODELOPTS:
CONC

URBAN FLAT

NOCALM

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3

**

GROUP ID		AVERAGE CONC	DATE (YYMMDDHH)	RECEPTOR	(XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	HIGH 1ST HIGH VALUE IS	1.49183	ON 81091024: AT (-2000.00,	700.00,	0.00,	0.00) DC NA
	HIGH 2ND HIGH VALUE IS	1.37474	ON 81090824: AT (-2000.00,	600.00,	0.00,	0.00) DC NA
	HIGH 3RD HIGH VALUE IS	1.29248	ON 81102424: AT (-1800.00,	600.00,	0.00,	0.00) DC NA
	HIGH 4TH HIGH VALUE IS	1.24995	ON 81080824: AT (-2000.00,	600.00,	0.00,	0.00) DC NA
	HIGH 5TH HIGH VALUE IS	1.20030	ON 81091824: AT (-1800.00,	600.00,	0.00,	0.00) DC NA

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** ISCST3 - VERSION 00101 *** *** Alliance Power, Inc.
 *** Drew Substation (1-Hour, 8-Hour, 24-Hour)
**MODELOPTs:
CONC URBAN FLAT NOCALM

*** 03/07/
 *** 07:..
 PAGE 00

*** Message Summary : ISCST3 Model Execution ***

----- Summary of Total Messages -----

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 1398 Informational Message(s)
A Total of 1398 Calm Hours Identified

***** FATAL ERROR MESSAGES *****
 *** NONE ***

***** WARNING MESSAGES *****
 *** NONE ***

*** ISCST3 Finishes Successfully ***

1

ISCST3 - (DATED 00101)

ISCST3X PC (32 BIT) VERSION 3.4.0
(C) COPYRIGHT 1991-2000, TRINITY CONSULTANTS

Run Began on 3/07/2001 at 7:51:06

** BREEZE ISC SUITE v3.4.2 - C:\TRINITY\ISC32\AllianceDrew2.dat
** T3, Dallas, TX

CO STARTING

CO TITLEONE Alliance Power, Inc.
CO TITLETWO Drew Substation (500 Hours-Annual)
CO MODELOPT CONC URBAN NOCALM
CO AVERTIME ANNUAL
CO POLLUTID OTHER
CO TERRHGT5 FLAT
CO RUNORNOT RUN
CO FINISHED

SO STARTING

SO ELEVUNIT METERS
SO LOCATION SRC1 POINT 0.0 0.0 0
SO SRCPARAM SRC1 5.700000E-02 13.716 770.9278 20.78475 2.401824
SO EMISFACT SRC1 MONTH 0.0 0.0 0.0 0.0 0.0 1.0 1.0 1.0 1.0
SO EMISFACT SRC1 MONTH 0.0 0.0
SO SRCGROUP ALL
SO FINISHED

Notes

- Annual @ 500 hours only
- Flat Terrain, No Calm, Urban
- Monthly Emission Factor Adjustments
- Normalized Emission Rate Scaled To Reflect 500 hours/year.

*** ISCST3 - VERSION 00101 ***

*** Alliance Power, Inc.

03/07/97

*** Drew Substation (500 Hours-Annual)

07:5

**MODELOPTS:

CONC

URBAN FLAT

NOCALM

PAGE 1

*** THE SUMMARY OF MAXIMUM ANNUAL (1 YRS) RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3

**

GROUP ID		AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZFLAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS	0.01216 AT (-1700.00, 800.00, 0.00, 0.00)	DC	NA
	2ND HIGHEST VALUE IS	0.01211 AT (-1800.00, 800.00, 0.00, 0.00)	DC	NA
	3RD HIGHEST VALUE IS	0.01210 AT (-1900.00, 900.00, 0.00, 0.00)	DC	NA
	4TH HIGHEST VALUE IS	0.01204 AT (-1800.00, 900.00, 0.00, 0.00)	DC	NA
	5TH HIGHEST VALUE IS	0.01202 AT (-1600.00, 700.00, 0.00, 0.00)	DC	NA
	6TH HIGHEST VALUE IS	0.01199 AT (-1600.00, 800.00, 0.00, 0.00)	DC	NA
	7TH HIGHEST VALUE IS	0.01198 AT (-2000.00, 900.00, 0.00, 0.00)	DC	NA
	8TH HIGHEST VALUE IS	0.01197 AT (-1500.00, 700.00, 0.00, 0.00)	DC	NA
	9TH HIGHEST VALUE IS	0.01192 AT (-1900.00, 300.00, 0.00, 0.00)	DC	NA
	10TH HIGHEST VALUE IS	0.01190 AT (-2000.00, 1000.00, 0.00, 0.00)	DC	NA

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** ISCST3-- VERSION 00101 ***

*** Alliance Power, Inc.

*** Drew Substation (500 Hours-Annual)

03/07/01
07:51:11
PAGE 60

**MODELOPTs:

CONC

URBAN FLAT

NOCALM

*** Message Summary : ISCST3 Model Execution ***

----- Summary of Total Messages -----

A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 1398 Informational Message(s)
A Total of 1398 Calm Hours Identified

***** FATAL ERROR MESSAGES *****
*** NONE ***

***** WARNING MESSAGES *****
*** NONE ***

*** ISCST3 Finishes Successfully ***

ISCST3 - (DATED 00101)

ISCST3X PC (32 BIT) VERSION 3.4.0
(C) COPYRIGHT 1991-2000, TRINITY CONSULTANTS

Run Began on 3/07/2001 at 8:00:02

** BREEZE ISC SUITE v3.4.2 - C:\TRINITY\ISC32\AllianceDrew3.dat
** T3, Dallas, TX

CO STARTING
CO TITLEONE Alliance Power, Inc.
CO TITLETWO Drew Substation (Unscaled-8760 Hours/Year)
CO MODELOPT CONC URBAN NOCALM
CO AVERTIME 1 8 24 ANNUAL
CO POLLUTID OTHER
CO TERRHGTs FLAT
CO RUNORNOT RUN
CO FINISHED

SO STARTING
SO ELEVUNIT METERS
SO LOCATION SRC1 POINT 0.0 0.0 0
SO SRCPARAM SRC1 1.000000E+00 13.716 770.9278 20.78475 2.401824
SO SRCGROUP ALL
SO FINISHED

Notes:

- Full Run, No scaled Emissions
- Flat Terrain, No Calm, Urban
- Emission Rate Normalized @ 1.0 g/s.

ISCST3 - VERSION 00101 *** *** Alliance Power, Inc.
 *** Drew Substation (Unscaled-8760 Hours/Year)

*** 03/07/01

08:00:07

**MODELOPTs:

PAGE

464

CONC

URBAN FLAT

NOCALM

*** THE SUMMARY OF HIGHEST 1-HR RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3 **

NETWORK		DATE		RECEPTOR		OF TYPE		GRID-	
GROUP ID	ID	AVERAGE CONC	(YYMMDDHH)	(XR, YR, ZELEV, ZFLAG)					
ALL	HIGH	1ST HIGH VALUE IS	4.86656	ON 81122603: AT (-1900.00,	1200.00,	0.00,	0.00)	DC NA
	HIGH	2ND HIGH VALUE IS	4.86436	ON 81122604: AT (-2000.00,	1000.00,	0.00,	0.00)	DC NA
	HIGH	3RD HIGH VALUE IS	4.86226	ON 81122403: AT (-2000.00,	1000.00,	0.00,	0.00)	DC NA
	HIGH	4TH HIGH VALUE IS	4.86108	ON 81013006: AT (-2000.00,	1000.00,	0.00,	0.00)	DC NA
	HIGH	5TH HIGH VALUE IS	4.85175	ON 81122502: AT (-2000.00,	1000.00,	0.00,	0.00)	DC NA

*** RECEPTOR TYPES: GC = GRIDCART
GF = GRIDPOLR
DC = DISCCART
DP = DISCPOLR

ISCST3 - VERSION 00101 *** *** Alliance Power, Inc.
*** Drew Substation (Unscaled-8760 Hours/Year)

*** 03/07/01

08:00:07

**MODELOPTs:

PAGE

465

CONC

URBAN FLAT

NOCALM

*** THE SUMMARY OF HIGHEST 8-HR RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3

**

NETWORK		DATE		RECEPTOR (XR, YR, ZELEV, ZFLAG)				OF TYPE	GRID-
GROUP ID		AVERAGE CONC	(YYMMDDHH)						
ID									
ALL	HIGH 1ST HIGH VALUE IS	3.84896	ON 81122508: AT (-2000.00,	900.00,	0.00,	0.00)	DC	NA
	HIGH 2ND HIGH VALUE IS	3.53640	ON 81122908: AT (-1900.00,	800.00,	0.00,	0.00)	DC	NA
	HIGH 3RD HIGH VALUE IS	3.37992	ON 81122908: AT (-1800.00,	800.00,	0.00,	0.00)	DC	NA
	HIGH 4TH HIGH VALUE IS	3.28425	ON 81121808: AT (-1800.00,	800.00,	0.00,	0.00)	DC	NA
	HIGH 5TH HIGH VALUE IS	3.06571	ON 81112308: AT (-2000.00,	800.00,	0.00,	0.00)	DC	NA

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

ISCST3 - VERSION 00101 ***

*** Alliance Power, Inc.

*** 03/07/01

*** Drew Substation (Unscaled-8760 Hours/Year)

08:00:07

**MODELOPTs:

PAGE

466

CONC

URBAN FLAT

NOCALM

*** THE SUMMARY OF HIGHEST 24-HR RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M³

**

DATE

NETWORK

GROUP ID
ID

AVERAGE CONC

(YYMMDDHH)

RECEPTOR (XR, YR, ZELEV, ZFLAG)

OF TYPE GRID-

ALL	HIGH	1ST HIGH VALUE IS	2.01817	ON 81122524: AT (-2000.00,	900.00,	0.00,	0.00)	DC	NA
	HIGH	2ND HIGH VALUE IS	1.77638	ON 81122624: AT (-1900.00,	900.00,	0.00,	0.00)	DC	NA
	HIGH	3RD HIGH VALUE IS	1.68618	ON 81012524: AT (-2000.00,	800.00,	0.00,	0.00)	DC	NA
	HIGH	4TH HIGH VALUE IS	1.65413	ON 81122624: AT (-1900.00,	800.00,	0.00,	0.00)	DC	NA
	HIGH	5TH HIGH VALUE IS	1.59539	ON 81022224: AT (-1700.00,	700.00,	0.00,	0.00)	DC	NA

*** RECEPTOR TYPES: GC = GRIDCART
GP = GRIDPOLR
DC = DISCCART
DP = DISCPOLR
BD = BOUNDARY

*** ISCST3 - VERSION 00101 *** *** Alliance Power, Inc.
 *** Drew Substation (Unscaled-8760 Hours/Year)

*** 03/C

08:00:07

**MODELOPTs:

PAGE

463
 CONC

URBAN FLAT

NOCALM

*** THE SUMMARY OF MAXIMUM ANNUAL (1 YRS) RESULTS ***

** CONC OF OTHER IN MICROGRAMS/M**3

**

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZELAG)	OF TYPE	NETWORK GRID-ID
ALL	1ST HIGHEST VALUE IS 0.59274 AT (-1800.00, 800.00,	0.00, 0.00)	DC NA
	2ND HIGHEST VALUE IS 0.59069 AT (-1600.00, 700.00,	0.00, 0.00)	DC NA
	3RD HIGHEST VALUE IS 0.59023 AT (-1700.00, 700.00,	0.00, 0.00)	DC NA
	4TH HIGHEST VALUE IS 0.58915 AT (-1700.00, 800.00,	0.00, 0.00)	DC NA
	5TH HIGHEST VALUE IS 0.58890 AT (-1900.00, 800.00,	0.00, 0.00)	DC NA
	6TH HIGHEST VALUE IS 0.58467 AT (-2000.00, 900.00,	0.00, 0.00)	DC NA
	7TH HIGHEST VALUE IS 0.58464 AT (-1900.00, 900.00,	0.00, 0.00)	DC NA
	8TH HIGHEST VALUE IS 0.58373 AT (-1800.00, 700.00,	0.00, 0.00)	DC NA
	9TH HIGHEST VALUE IS 0.58192 AT (-1500.00, 700.00,	0.00, 0.00)	DC NA
	10TH HIGHEST VALUE IS 0.52026 AT (-2000.00, 800.00,	0.00, 0.00)	DC NA

*** ISCST3 - VERSION 00101 ***

*** Alliance Power, Inc.

03/07/01

*** Drew Substation (Unscaled-8760 Hours/Year)

08:00:07

**MODELOPTs:

PAGE

467

CONC

URBAN FLAT

NOCALM

*** Message Summary : ISCST3 Model Execution ***

----- Summary of Total Messages -----

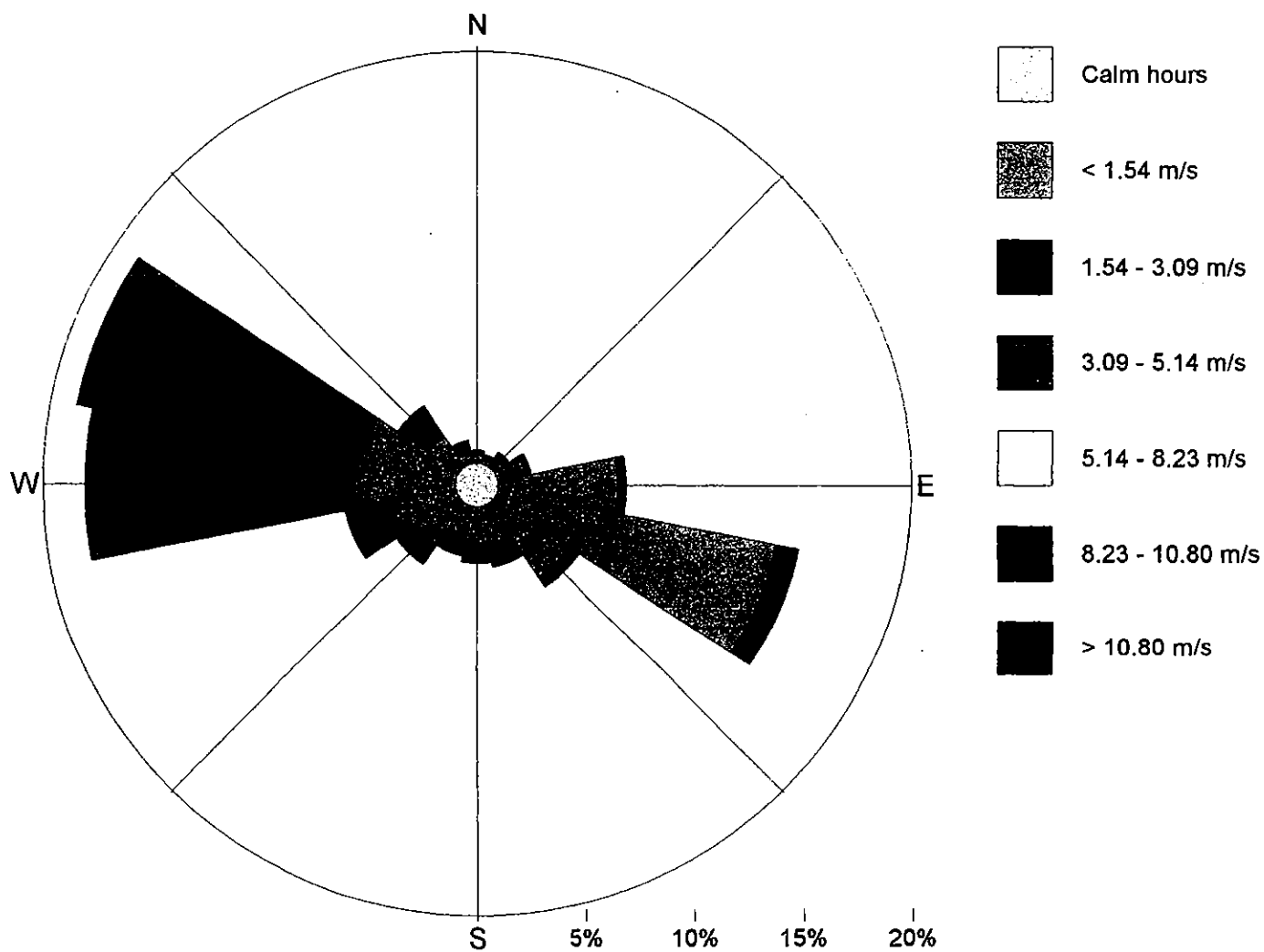
A Total of 0 Fatal Error Message(s)
A Total of 0 Warning Message(s)
A Total of 1398 Informational Message(s)
A Total of 1398 Calm Hours Identified

***** FATAL ERROR MESSAGES *****
*** NONE ***

***** WARNING MESSAGES *****
*** NONE ***

*** ISCST3 Finishes Successfully ***

Windrose



Redlands Met Station

ATTACHMENT J

NOISE ISOPLETHS

BLACK & VEATCH

MEMORANDUM

Alliance Colton, LLC
Colton California GE 10B Simple Cycle Sites
Facility Noise Emissions

B&V Project 099918.055

March 8, 2001

To: Mike Emmerling

From: Andrew Dicke

We have evaluated the facility noise emissions from the proposed Alliance Simple Cycle Combustion Turbine Facilities. We have evaluated both the Century Substation Site and the Drews Substation Site.

A local ordinance requires the sound level not exceed 65 dBA at the site property boundaries. This criteria is applicable at both sites. The sites are located in relatively remote locations. In some instances, compliance with the 65 dBA property boundary requirement will require additional capital cost with no associated benefit to the surrounding community. The client should investigate the possibility of obtaining variances from the property boundary requirements at these locations.

The Century Site is located near existing buildings. These buildings are identified as industrial offices. B&V generally recommend that sound levels not exceed 60 dBA at the exterior of office structures. Modeling results indicated the facility sound levels would exceed both the 65 dBA property boundary criteria and the recommended level of 60 dBA at the office buildings. A 15 foot tall barrier wall along the south property boundary would satisfy the 65 dBA property boundary criteria to the south and the recommended 60 dBA target at the buildings. However, sound levels would be approximately 80 dBA at the north boundary. B&V recommends installing a barrier wall along the south boundary of the site and pursue a variance for the other boundaries. Compliance with the 65 dBA property boundary criteria could be achieved by installing a 15 foot tall barrier wall along all new property boundaries and keeping the existing 10 foot tall barrier wall around the existing substation.

The Drews Site is located in a very remote location. There are no existing developments within the existing area. The projected facility sound level is approximately 75 dBA at the property boundaries. However, there is not development in the area to be impacted by the facility noise emissions. The installation of additional mitigation would result in increased facility capital cost with no associated benefits to the surrounding community. B&V recommends pursuit of a variance from the property boundary criteria. If a variance is not available, facility mitigation must include the Universal Silencer "Option 3" silencer, as specified for the Century Site, and a 15 foot tall barrier wall along all property boundaries.

ENVIRONMENTAL NOISE EMISSIONS

Environmental Noise Limit. The client has indicated the plant must satisfy a local noise criteria of 65 dBA at the property boundary. It is B&V's understanding the client is pursuing a variance to this noise criteria. The noise modeling will be conducted based on standard equipment noise emission levels and mitigation necessary to satisfy the 65 dBA noise criteria.

Century Site. Existing buildings are located approximately 200 feet southeast of the turbine locations. These buildings are identified as industrial offices. B&V generally recommends that sound levels outside of office/commercial developments not exceed 60 dBA. Levels above 60 dBA would likely result in complaints from workers within the offices.

Alliance Colton, LLC
Colton California GE 10B Simple Cycle Sites
Facility Noise Emissions

B&V Project 99918.055

March 2, 2001

Drews Site. The Drews site is located in a remote area. There is no existing development within close proximity to the site. Mitigation will be evaluated to achieve the noise criteria of 65 dBA at the property boundary.

Noise Modeling Methodology.

The facility noise emissions were modeled using noise prediction software developed at Black & Veatch. The model simulated the outdoor propagation of sound from each point source and accounted for sound wave divergence, atmospheric sound absorption, sound directivity, and sound attenuation due to interceding barriers. A database was developed which specified the location, octave band sound power levels, and sound directivity of each noise source. A receptor grid was specified which covered the entire area of interest. The model calculated the overall A-weighted sound pressure level at each receptor location based on the octave band sound level contribution of each noise source. Finally, a noise contour plot was produced based on the overall sound pressure level at each receptor location.

Noise modeling was conducted to predict the environmental noise emissions during normal facility operation. Normal operation excludes intermittent activities such as start-up, shut down, steam release, bypass operation, and any other abnormal or upset operating conditions.

Noise Sources. The equipment arrangement is based on B&V Drawings that depict the facility site arrangements on aerial site photographs. The primary noise sources anticipated with these facilities include the combustion turbine generator (CTG) packages [GE 10], and gas compressor equipment. The combustion turbine equipment noise modeling includes the turbine exhaust, turbine inlet, turbine enclosure, generator enclosure, lube oil coolers, and enclosure ventilation equipment. The turbine noise emissions are based on data provided by General Electric. The exhaust noise is based on data provided by Universal Silencer. The gas compressor noise emissions are based on data provided by the Edison Electric Institute (EEI) in the Electric Power Plant Environmental Noise Guide (1984).

Equipment Noise Emissions. The environmental noise emissions during normal facility operation were estimated based on standard combustion turbine equipment, with the exception of the exhaust silencer.

The Exhaust noise was based on data provided by Universal Silencer. The modeling for the Century Site assumed a silencer that achieved 35 dBA at 400 feet (Option 3 Silencer). The modeling for the Drews Site assumed a silencer that achieved 60 dBA at 400 feet from the equipment (Option 1 Silencer).

Century Substation Site Noise Emissions

The Century Site noise emissions are shown in Figures Century 1 and Century 2. Figure Century 1 depicts the facility noise emissions with the existing 10 foot tall wall around the substation and no wall along the combustion turbine facility boundary. The facility noise emissions are anticipated to be up to 80 dBA at the property boundary and 65 dBA at the office buildings.

Figure Century 2 depicts the facility noise emissions with a 15 foot tall solid barrier on all property boundaries. The facility noise emissions will be 65 dBA or less at all boundaries and approximately 55 dBA at the office buildings. These levels will satisfy the property boundary criteria of 65 dBA and satisfy the recommended level of 60 dBA at the office building.

A barrier wall located along only the south boundary would satisfy the 65 dBA property boundary criteria to the south, and the recommended level of 60 dBA to the office building. The levels

Alliance Colton, LLC
Colton California GE 10B Simple Cycle Sites
Facility Noise Emissions

B&V Project 99918.055

March 2, 2001

would exceed the 65 dBA criteria to the north. There is no development to the north. A barrier wall on the north boundary, while satisfying the property boundary criteria, will not provide any benefit to the surrounding community. In addition, a barrier wall to the north would reflect a portion of the turbine noise towards the existing office buildings. The projected sound levels include the barrier reflective effect. Sound levels at the office building would be approximately 2 dBA lower without the north boundary wall. B&V recommends installing the wall along the south property boundary of the new site and keep the existing 10 foot wall around the existing substation and obtain a variance from the property boundary code along the north boundary.

Drews Substation Site Noise Emission

The Drews Site noise emissions are shown in Figures Drews 1 and Drews 2. Figure Drews 1 depicts the facility noise emissions with the existing 10 foot tall wall along around the substation and no wall along the existing boundary. The facility noise emissions are anticipated to be 75 dBA at the property boundary. Figure Drews 2 depicts the facility noise emissions with a new 15 foot tall wall around the boundary. The facility sound level will exceed 65 dBA with this wall. Achieving 65 dBA would require the installation of additional stack silencing.

B&V recommends obtaining a variance from the 65 dBA property boundary criteria. If a variance is not available, achieving 65 dBA at the boundary, would require a 15 foot tall wall around the boundary and installation of the Universal "Option C" silencer.

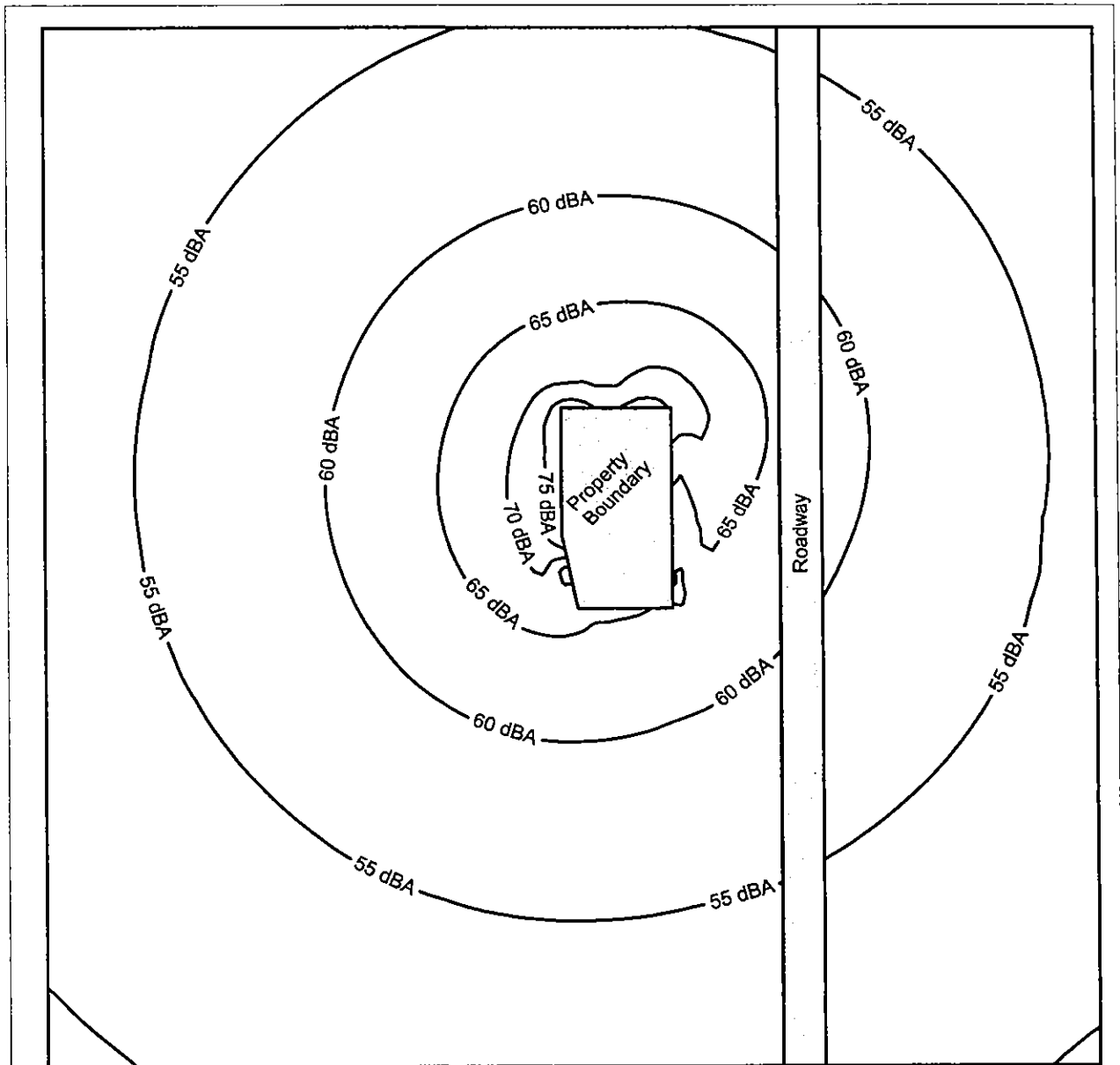
Should you have any questions or comments please contact me at 913-458-2063.

Cc: W. Brent Ferren

Alliance Colton, LLC
Colton California GE 10B Simple Cycle Sites
Facility Noise Emissions

B&V Project 99918.055

March 2, 2001

**EQUIPMENT SOUND LEVEL SPECIFICATIONS**

CTG 10 Standard Package
Exhaust Silencer - 60 dBA at 400 feet
(Universal Silencer Option 1)

Barrier Wall Around Turbines and
Substation Property Boundary - 10' tall

Figure Draws 1.

GE 10B EQUIPMENT WITH EXISTING 10' TALL
PROPERTY BOUNDARY BARRIER WALL
Predicted A-weighted sound pressure levels (re: 20e-6 Pa)
during normal operation of the proposed facility. Sound pressure
level results do not include the barrier effect of off-site buildings,
structures, and intervening terrain.

**CITY OF COLTON
DREWS SUBSTATION SITE**



0 FT 250 FT 500 FT

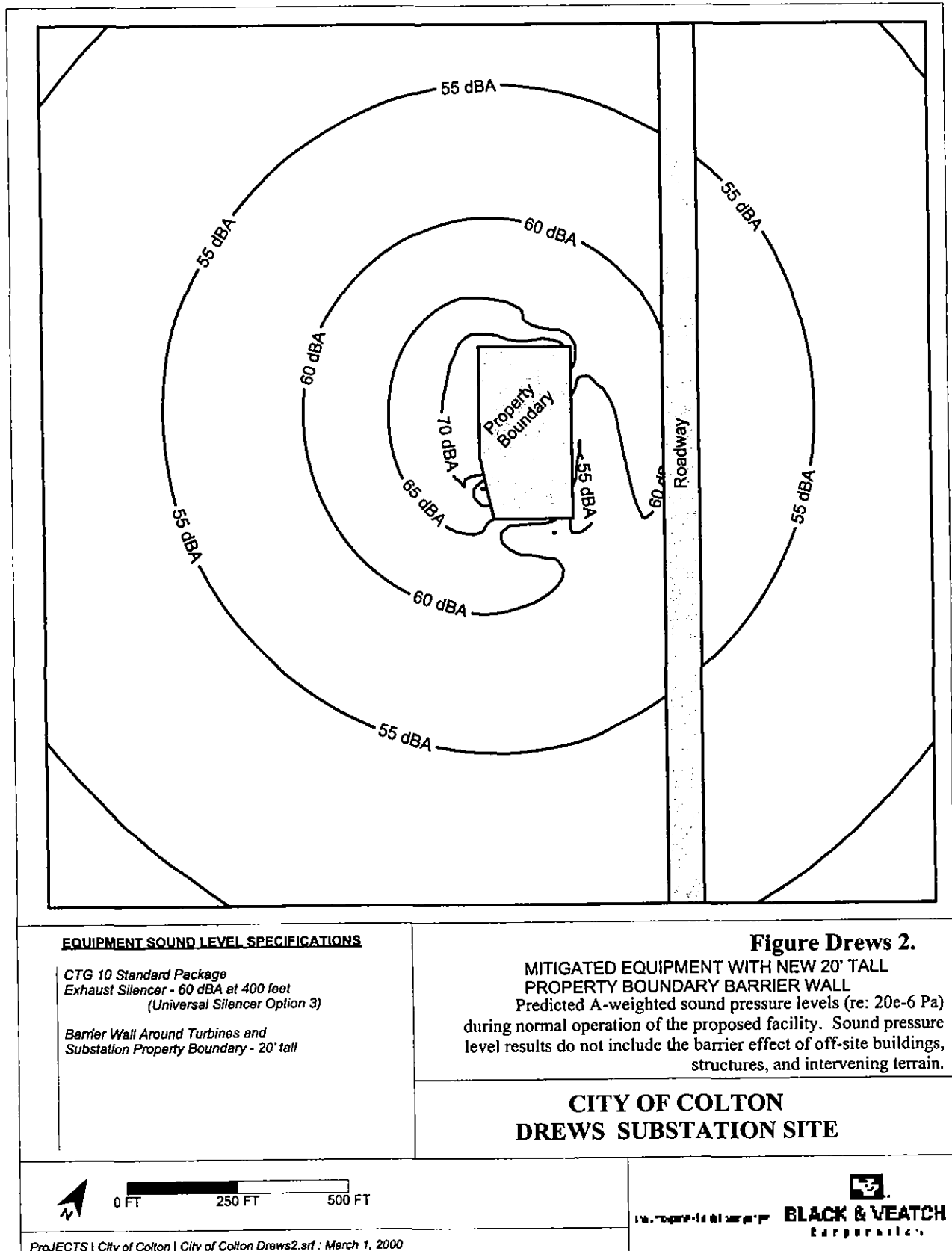


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Alliance Colton, LLC
Colton California GE 10B Simple Cycle Sites
Facility Noise Emissions

B&V Project 99918.055

March 2, 2001



ATTACHMENT K

BIOLOGICAL RESOURCES

ENVIRONMENTAL ASSESSMENT

For The

**ISSUANCE OF AN INCIDENTAL TAKE PERMIT
UNDER SECTION 10(A)(1)(B) OF THE ENDANGERED SPECIES ACT**

For The

**ENDANGERED DELHI SANDS FLOWER-LOVING FLY
COLTON TRANSMISSION LINE AND SUBSTATION PROJECT**

By The

**CITY OF COLTON
COLTON, CALIFORNIA**

July 1995

Prepared For:

**U.S. Fish and Wildlife Service
Ecological Services
Carlsbad Field Office
2730 Loker Avenue West
Carlsbad, CA 92008**

Prepared by:

**ENSR CONSULTING AND ENGINEERING
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Contact: Phil Hackney, Program Manager (970) 493-8878**

CONTENTS

1.0 INTRODUCTION	1-1
1.1 Overview	1-1
1.2 Purpose and Need for Action	1-4
1.3 Proposed Action and Decisions Needed	1-5
1.4 Rational for Mitigation Approach	1-6
1.5 Regulatory and Compliance Framework and Procedures	1-7
2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION	2-1
2.1 Proposed Action	2-1
2.1.1 Project Description	2-1
2.1.1.1 Overhead Transmission Line	2-8
2.1.1.2 Underground Distribution Line	2-8
2.1.1.3 Substation Site	2-9
2.1.1.4 Construction Schedule	2-10
2.2 No Action Alternative	2-10
2.3 Alternatives Not Selected for Detailed Analysis	2-10
3.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT	3-1
3.1 Regional Context	3-1
3.2 Project Site Biological Issues	3-1
3.2.1 Vegetation	3-1
3.2.1.1 Listed and Candidate Plant Species	3-3
3.2.2 Listed and Candidate Wildlife Species	3-4
3.2.2.1 Delhi Sands Flower-loving Fly	3-4
3.2.3 Other Potential Sensitive Wildlife Species	3-5
3.3 Project Site Cultural Resource Issues	3-8
3.4 Project Site Soil Issues	3-9
4.0 ENVIRONMENTAL CONSEQUENCES	4-1
4.1 Proposed Action	4-1
4.1.1 Direct Impacts	4-1
4.1.2 Indirect Impacts	4-1
4.1.3 Cumulative Impacts	4-4
4.1.4 Mitigation Measures	4-4
4.2 No Action Alternative	4-9

CONTENTS
(Cont'd)

4.3 Comparison of Impacts	4-9
5.0 AGENCIES AND INDIVIDUALS CONSULTED	5-1
6.0 REFERENCES CITED	6-1
APPENDIX A - PLANT SURVEY RESULTS	

LIST OF TABLES

2-1	Overhead 66-kV Transmission Line Segment Summary for the Colton Transmission Line and Substation Project	2-4
2-2	Underground 12.47-kV Distribution Line Segment Summary for the Colton Transmission Line and Substation Project	2-7
4-1	Colton Transmission Line and Substation Project Potential Habitat Disturbance . .	4-2
4-2	Colton Transmission Line and Substation Project Summary Impact Comparisons Between Proposed Action and No Action Alternative	4-10

LIST OF FIGURES

1-1	General Vicinity Map - Colton Transmission Line and Substation Project	1-2
1-2	Colton Transmission Line and Substation Project	1-3
2-1	Colton Transmission Line and Substation Project - Proposed West Substation and Alternative Substation Sites Evaluated	2-2
2-2	Colton Transmission Line and Substation Project - Mitigation Site for the Delhi Sands Flower-loving Fly	2-3
2-3	Colton Transmission Line and Substation Project - Alternative Mitigation Sites Evaluated for the Delhi Sands Flower-loving Fly	2-11
3-1	Colton Transmission Line and Substation Project - Sensitive Biological Resources Located within the Project Area	3-2
4-1	Colton Transmission Line and Substation Project - Mitigation Site for the Delhi Sands Flower-loving Fly	4-7

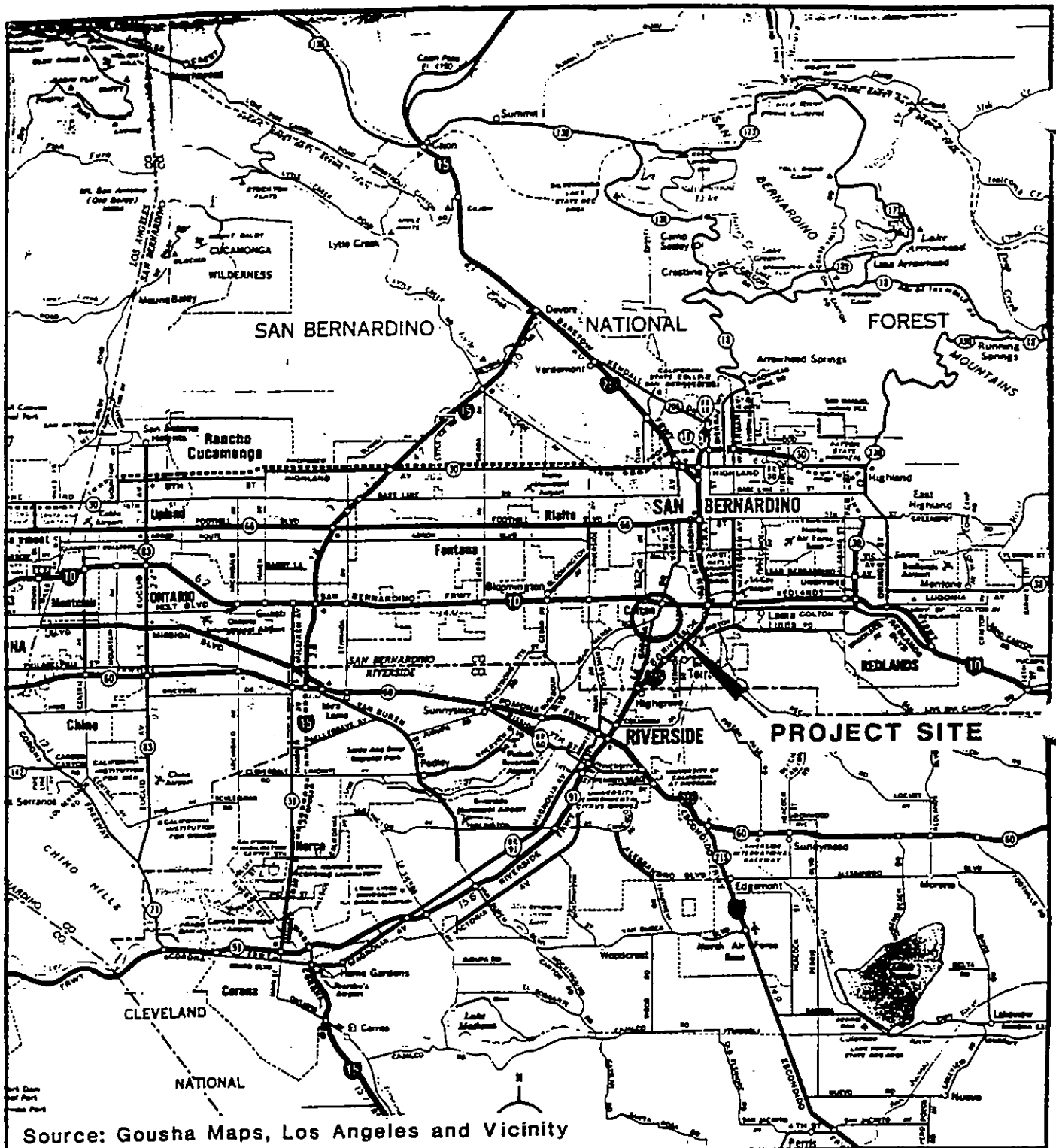
1.0 INTRODUCTION

1.1 Overview

The City of Colton proposes to construct a transmission line and substation project located between Interstate 10 (I-10) and the Santa Ana River (Figures 1-1 and 1-2). Most of the project area is located in undeveloped areas representing suitable or occupied habitat for the endangered Delhi sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*) (DSF). However, portions of the proposed overhead transmission line and underground distribution line are located within developed industrial, commercial, and residential areas within Colton. Construction of the substation and the majority of the access road would result in the permanent loss of 2.4 acres of suitable DSF habitat on undeveloped land. A minimal amount of DSF Habitat (less than .02 acre) would be permanently impacted at the pole "footprint" locations. Construction of the remaining portion of the access road (sideslopes to be reclaimed), overhead transmission line, substation (perimeter to be reclaimed), and underground distribution line would result in the temporary disturbance of 2.2 acres of suitable or occupied DSF habitat on undeveloped land. Therefore, 4.6 acres of suitable DSF habitat on undeveloped land would be affected by the proposed project.

An Initial Study (IS) was completed and finalized in June 1994 with the issuance of a Negative Declaration by the City of Colton (Community Development Department). Since the issuance of the Negative Declaration, the proposed overhead transmission line route was realigned. A revised IS was distributed by the City of Colton on January 10, 1995 to address these route realignments and related environmental concerns (City of Colton 1995). The City of Colton concluded that the proposed project could have a significant effect on the environment, more specifically, special status species. However, there would not be a significant effect in this case if mitigation measures were required as a part of the conditions of approval of the project. Mitigation measures are included in the Habitat Conservation Plan (HCP), Environmental Assessment (EA), and Implementation Agreement (IA) prepared prerequisite to United States Fish and Wildlife Service (USFWS) issuing a Section 10(a) Incidental Take Permit.

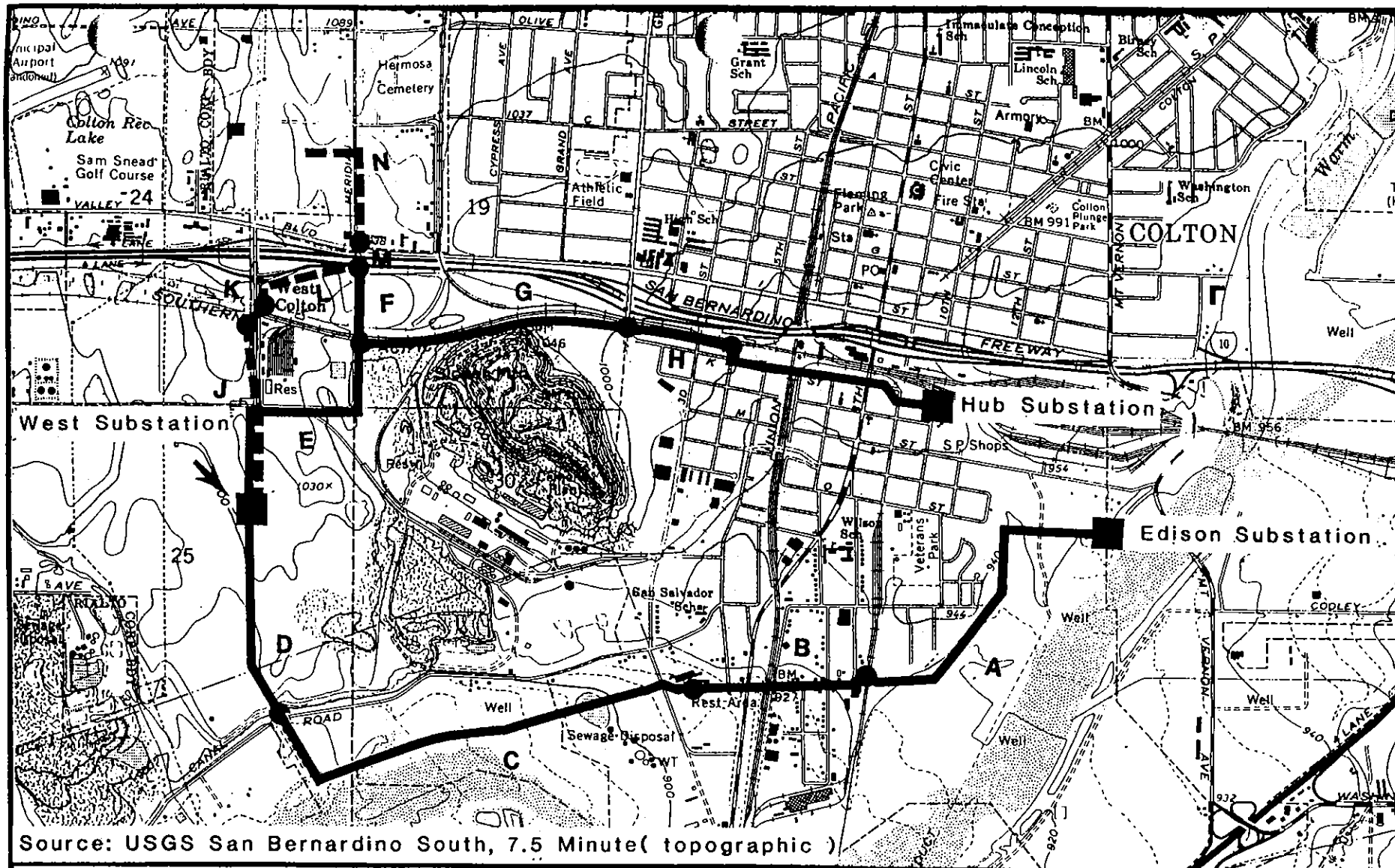
A field reconnaissance was completed in the project area to evaluate potential environmental concerns and to identify potential habitat for special status species. ENSR Consulting and Engineering (ENSR) had several formal discussions with the USFWS during preparation of the IS regarding special status species (e.g., DSF) that potentially occur in the project area. ENSR also discussed these issues with the California Department of Fish and Game (CDFG). A survey



Scale 1" : 5.1 miles

Figure 1 - 1
General Vicinity Map
Colton Transmission Line and
Substation Project

ENSR Consulting and Engineering



██████████ (A - I) 66 kV Overhead Transmission Line

■ ■ ■ (J - N) 12.47 kV Underground Distribution Line

● Route Segment Limits

Scale 1:24,000

Figure 1-2 Colton Transmission Line and Substation Project

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for special status plant species was conducted by a local botanist in potential habitat areas during 1994. Additional information regarding the DSF was obtained via discussions with Dr. Greg Ballmer (Entomology Professor-University of California-Riverside). At the time the DSF was listed (September 22, 1993), the southern portion of Segment D (see Figure 1-1) was known to be occupied.

This EA identifies the purpose and need for a Federal Section 10(a) Incidental Take Permit, describes the environment that would be affected by the proposed project, identifies possible environmental consequences of the proposed project, and describes proposed mitigation measures.

1.2 Purpose and Need for Action

The Permit Applicant has applied to the USFWS pursuant to the Endangered Species Act (ESA) of 1973, as amended, for a Section 10(a) Incidental Take Permit (Permit). The USFWS's purpose for issuance of this Permit would be to authorize incidental take of the DSF in the course of otherwise lawful activities associated with construction of the proposed substation and transmission line project. Such authorization is necessary because activities associated with the proposed transmission line and substation may result in take of DSF, despite the mitigation program proposed by the applicant. The applicant and USFWS consider implementation of the HCP in connection with a section 10(a)(1)(B) permit to be an effective means to reconcile the proposed transmission line and substation with the section 9 prohibition and other conservation mandates under the ESA.

In 1989, Colton's Electric Utility Department (Utility) initiated a study to make recommendations for the expansion of the Utility's transmission system to accommodate some existing and predicted future electric loads on the west side of the city (City of Colton 1995). Colton had annexed a portion of land encompassing approximately 650 acres. In addition, San Bernardino County had announced plans to build the County Medical Hospital (Hospital) north of I-10. It was estimated that the addition of the Hospital and related businesses would increase the load on the Utility's system by approximately 10 megawatts (MW) beginning in 1997 to 1998. The annexed land and the increasing electrical load resulted in the need to expand the Utility's electric system and substation capacity.

The methodology used in performing the study involved several steps. The first step provided a custom load analysis for the area to determine growth rate by customer class. This included identifying the study area and developing land use projections and a load forecast. The study area encompassed approximately 2,700 acres, most of it undeveloped, with only a few residences, farms, and industries.

The second step was a transmission analysis. This step included a review of the existing transmission system and assumptions for expansion, a load flow analysis of the existing Utility transmission system and possible additions, and a transmission line routing study to determine possible additions.

The final step determined potential sites to be used in the selection of a new substation. Factors considered included the location of the load center, environmental constraints, the adjacency to existing transmission lines, and site characteristics.

The projected electrical load for the study area for the year 2010 ranges from a low of 15,360 kilowatts (kW) to a high of 23,619 kW. The transmission analysis indicated that expanding the existing Utility 66 kilovolts (kV) transmission system with two additional (66-kV) circuits from the Utility Hub and Southern California Edison (Edison) substations to a new substation located in the study area is feasible. Several substation sites were considered; the proposed site (West Substation) is located south of Slover Avenue and west of California Portland Cement Company Land (Figure 2-2).

The overhead transmission lines would provide space for future overhead transmission and distribution facilities. Operation of the new Hospital will require a new Utility substation (West Substation) and new 66-kV overhead transmission lines with 12.47-kV overhead and underground distribution lines. The overhead transmission lines would interconnect Edison Substation, West Substation, and the Hub Substation. The increased electrical capacity provided by this project is designed for use by the new hospital and other consumers on the west side of Colton, outside of the substation and transmission line project area.

The needs and goals of the USFWS are to: (1) conserve the DSF and its habitat during the proposed action; and (2) ensure compliance with the ESA, National Environmental Policy Act (NEPA), and other applicable federal laws and regulations.

Approximately 4.6 acres of suitable or occupied DSF habitat would be taken during project activities. To mitigate this take, the City of Colton proposes to permanently preserve and manage 7.5 acres for the DSF.

1.3 Proposed Action and Decisions Needed

The USFWS Proposed Action is to issue a decision on the Section 10(a)(1)(B) Permit Application from the City of Colton. The Permit Applicant proposes to commence construction activities by grading and constructing on 2.4 acres of suitable DSF habitat. The number of DSFs that may be killed, harmed, or harassed by this action is difficult to quantify precisely. It is assumed that

all individuals of the species that currently utilize the 2.4 acres of land proposed for modification will be subject to take through habitat loss and modification via grading because 2.4 acres of the site will be graded and developed. In addition, 2.2 acres of suitable or occupied DSF habitat will be temporarily disturbed during transmission line, underground distribution line, substation, and access road (sideslopes to be reclaimed) construction activities. Individuals that occupy this habitat would be subject to take directly and immediately during construction activities (Table 1-3).

Pursuant to section 10(a)(2)(B) of the ESA (which comprise the issuance criteria for incidental take permits), decisions to be made by the FWS are:

1. Is the proposed take incidental to an otherwise lawful activity?
2. Are the impacts of the proposed taking minimized and mitigated to the maximum extent practicable?
3. Has the applicant ensured that adequate funding will be provided to implement the measures proposed in the HCP?
4. Is the proposed take such that it will not appreciably reduce the likelihood of the survival and recovery of the species in the wild?
5. Are there other measures that should be required as a condition of the permit?

The USFWS may choose to issue a permit conditioned on implementation of the HCP as submitted by the applicant, to issue a permit conditioned on implementation of the HCP as submitted together with other measures specified by the USFWS, or to deny the permit.

1.4 Rational for Mitigation Approach

The Permit Applicant proposes to mitigate for habitat loss and disturbance resulting from the proposed development through an HCP and IA which implement the acquisition, management, and preservation of occupied DSF habitat. Habitat acquisition to compensate for the permanent loss of DSF habitat will be based on a 2:1 ratio with the amount of DSF habitat affected by the incidental take. Habitat acquisition to compensate for the temporary disturbance within suitable or occupied habitat will be based on a 1:1 ratio with the amount of DSF habitat affected by the incidental take. The applicant would acquire a total of 7.5 acres. This additional acquisition is intended to buffer any unanticipated disturbance to DSF habitat during construction, operation, and maintenance activities.

1.5 Regulatory and Compliance Framework and Procedures

The proposed development would pose potential impacts on the DSF, which was listed as a federally endangered species on September 22, 1993. As a federally listed species, the DSF is afforded all protection provided by the ESA.

Section 9(a) of the ESA prohibits the take of an endangered species of fish or wildlife within the United States, its territories, or territorial sea. A take includes the direct killing, harming, or harassing of a species, or destruction of habitat that may be important for the species' survival. Section 10(a) of the ESA allows permits to be issued for projects that may take endangered species incidental to otherwise lawful activities, provided the permit application is supported by a HCP that will further the long-term conservation of the species.

The City of Colton applied to the USFWS for a permit pursuant to Section 10(a) of the Act to incidentally take the DSF for a period of 10 years (2 years for construction of the proposed project and an additional 8 years to cover the operation and maintenance activities that may affect the DSF) starting in September 1995. An HCP will be submitted as part of the application. The HCP provides a program of habitat acquisition and protection. The issuance of the Permit allows for incidental take of the DSF for a period of 10 years, contingent upon implementation of an HCP and an attending IA. Implementation of the HCP by the City of Colton and USFWS will include the following elements:

- acquisition and management of occupied DSF habitat (acquired on a 2:1 and 1:1 ratio for direct loss and temporary disturbance of suitable or occupied habitat, respectively, plus an additional 0.5 acre to buffer any unanticipated disturbance incurred during construction, operation, and maintenance activities) within habitat identified by the USFWS;
- monitoring and enforcement of the provisions and conditions of the ESA, IA, HCP, and the Section 10(a) permit; and
- implementation of the agreed upon avoidance and minimization measures.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

2.1 Proposed Action

The Proposed Action is to render a decision regarding the issuance of a Section 10(a) permit for the applicant's proposed project. This Permit would authorize incidental taking of the endangered DSF during the construction, operation, and maintenance of the Colton Transmission Line and Substation Project. Efforts were made to design the project to avoid or minimize direct and indirect impacts to suitable and occupied habitat. Substation site location alternatives (Figure 2-1), as well as various overhead transmission line alignments, were considered and evaluated during project design. Impacts to occupied DSF habitat could not be avoided completely based on engineering design requirements, the location of the existing substations and San Bernardino County Hospital, and current land use and zoning restrictions. However, the rerouted alignment minimizes habitat fragmentation in many areas transected by and adjacent to existing rights-of-way on previously disturbed habitats.

The Permit Applicant would purchase 2 acres for every acre of permanent habitat loss and 1 acre for every acre of temporary habitat disturbance, plus an additional .5 acre, to mitigate the impacts to suitable and occupied DSF habitat. The acquired habitat (Figure 2-2) would be managed and preserved in perpetuity, or for as long as USFWS determines the mitigation site is occupied or useful habitat for the DSF.

2.1.1 Project Description

The proposed Colton Transmission Line and Substation Project is located entirely within the city limits of Colton, California (see Figures 1-1 and 1-2), except for a short segment on San Bernardino County property. The project area is bounded by the Santa Ana River to the east and south, by I-10 to the north, and by the City of Rialto to the west. Most of the project area is located in undeveloped areas. However, portions of the proposed overhead transmission line route are located within developed industrial, commercial, and residential areas within Colton. Underground 12.47-kV distribution lines would predominantly be used to connect the West Substation with the Hospital that is currently under construction. The proposed overhead transmission and underground distribution line segments are summarized in Tables 2-1 and 2-2. Locations of the route segments and the substation are shown in Figure 1-2.

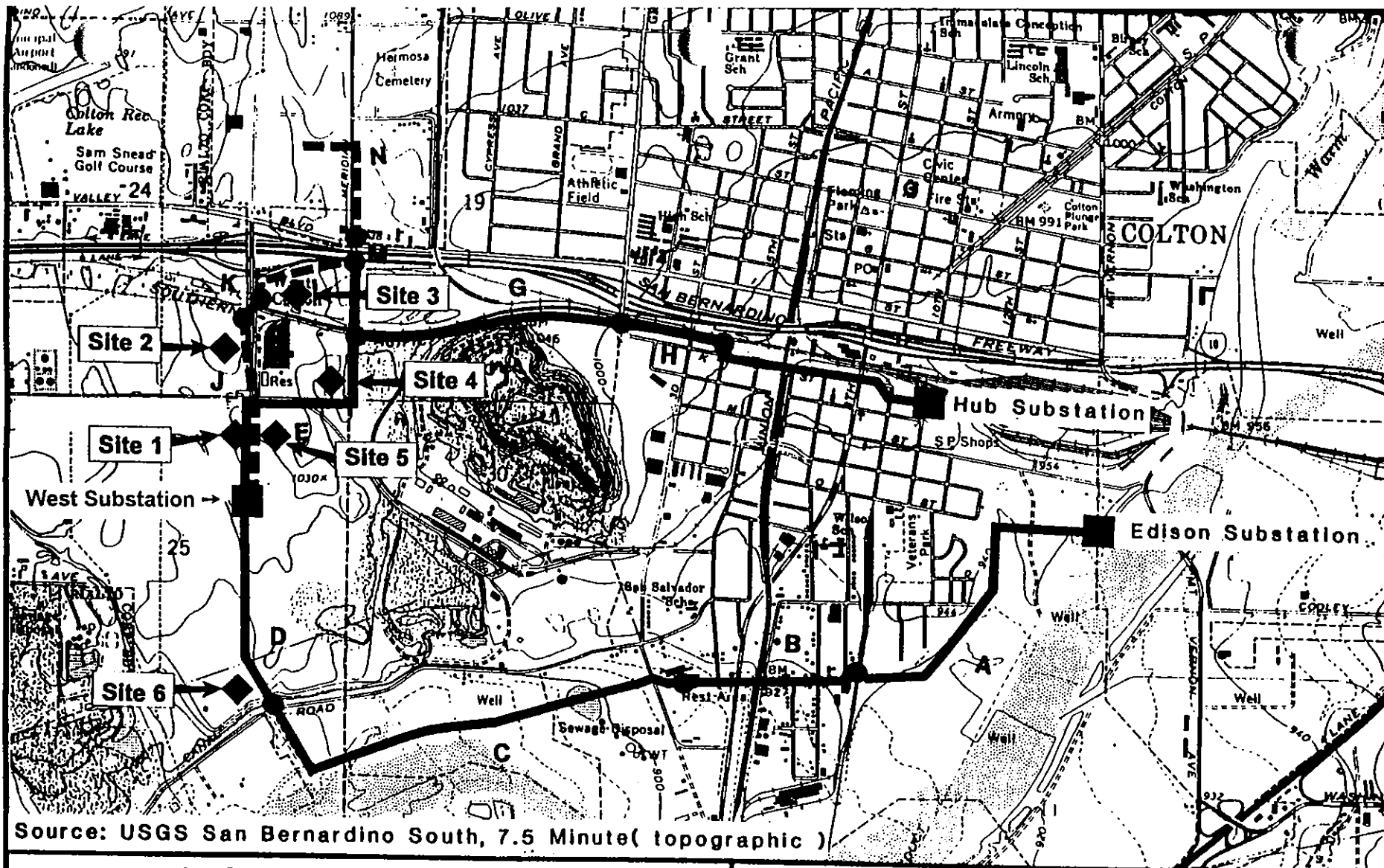
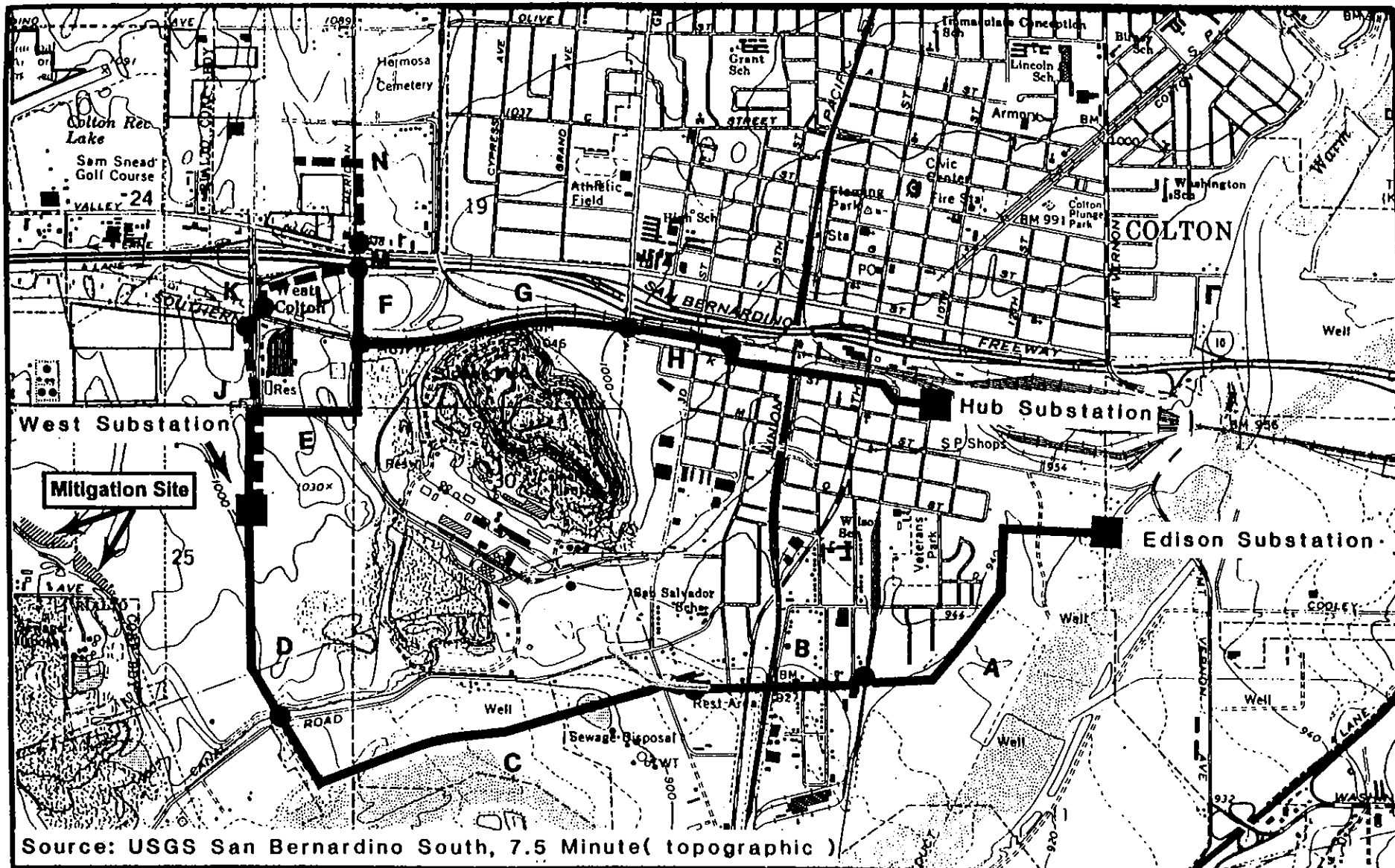


Figure 2-1
Colton Transmission Line and Substation Project
Proposed West Substation and Alternative Substation
Sites Evaluated

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Scale 1:24,000



- (A-I) 66 kV Overhead Transmission Line
- - - (J-N) 12.47 kV Underground Distribution Line
- Route Segment Limits
- ▨ DSF Mitigation Site



Scale: 1:24,000

Figure 2-2
Colton Transmission Line and Substation Project
Mitigation Site for the Delhi Sands Flower-loving Fly

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Table 2-1

**Overhead 66-kV Transmission Line Segment Summary for the Colton
Transmission Line and Substation Project**

Route Segment	Number of poles	Segment Length	Temporary Disturbance (acres)	Permanent Disturbance ¹ (acres)	Segment Location	Type of Construction	Comments
A	29 wood-27 steel-2	0.9 mile	.19	.0004	Edlson Substation to Fogg Street	New line	The majority of this segment crosses undeveloped land following Fogg Street (west side) and its extension to the south and west.
B	15 wood-13 steel-2	0.5 mile	.10	—	Fogg Street to Rancho Avenue	Rebuild line	This segment involves the rebuilding of an existing Utility distribution line located on the south side of Fogg Street. Pole for pole replacement is anticipated.
C	30 wood-13 steel-17	0.8 miles	.20	—	Rancho Avenue to Agua Mansa Road near the City Recycling Center	New line (construction complete)	City Sewage Treatment Plant, California Portland Cement Company, and City Recycling Center properties will be traversed. This segment parallels an existing SCE transmission line and the northern edge of the Santa Ana River levee. It then turns north and crosses Agua Mansa Road. As discussed in text, construction was completed in March 1995.
D	18 wood-15 steel-3	0.7 mile	.12	.0031	Agua Mansa to the West Substation	New line	This segment parallels an existing natural gas pipeline and city street ROW for Pepper Avenue.

Table 2-1 continued

Route Segment	Number of poles	Segment Length	Temporary Disturbance (acres)	Permanent Disturbance ¹ (acres)	Segment Location	Type of Construction	Comments
E (includes substation & access road)	20 wood-16 steel-4	0.7 mile	.13	2.37	West Substation to the Southern Pacific Railroad Property	New line	This segment runs north to Slover Avenue. The segment heads east on the south side of vacated Slover Avenue to the vacated Meridian Avenue extension on the California Portland Cement Company property. The route heads north on the east side of vacated Meridian Avenue extension until the railroad property.
F	6 wood	0.2 mile	.04	.0004	Southern Pacific Railroad Property to Interstate 10	New line	This segment heads north along the eastern edge of vacated Meridian Avenue ROW parallel to an existing SCE line, to a point near the Caltrans ROW. The line will go underground and will connect with the southern end of Segment M.
G	13 steel	0.7 mile	.09	--	Meridian Avenue to Rancho Avenue	Rebuild line	This segment involves the rebuilding of an existing SCE distribution line within a utility easement granted to Southern Pacific Railroad by the California Portland Cement Company between Meridian and Rancho Avenues.
H	7 wood-3 steel-4	0.3 mile	.05	.0042	Rancho Avenue to 4th Street	New line	This segment follows a city alley paralleling an existing telephone line. It borders the north side of residences along K Street between Rancho Avenue and 4th Street.

Table 2-1 continued

Route Segment	Number of poles	Segment Length	Temporary Disturbance (acres)	Permanent Disturbance ¹ (acres)	Segment Location	Type of Construction	Comments
I	20 wood-15 steel-5	0.6 mile	.13	--	4th Street to the Hub Station	Rebuild line	This segment will consist of rebuilding an existing Utility distribution line along residential streets and railroad ROW. It will include railroad crossings at 6th Street (Union Pacific) and 9th Street (Southern Pacific). It will terminate adjacent to the alley between K and L Streets at the Hub Substation.

¹Assuming 3 square feet permanent disturbance for wood poles, and 40 square feet permanent disturbance for steel poles on concrete foundations. Some steel poles would be directly imbedded, resulting in less actual disturbance.

Table 2-2

**Underground 12.47-kV Distribution Line Segment Summary for the
Colton Transmission Line and Substation Project**

Route Segment	Segment Length	Temporary Disturbance (acres)	Segment Location	Type of Construction	Comments
J	2,290 feet	0.28	West Substation to Southern Pacific Railroad Tracks	New line	This segment heads north from the West Substation, crosses Slover Avenue, and parallels an access road immediately west of Pepper Avenue to the railroad.
K	185 feet	--	Southern Pacific Railroad Tracks	New line (bore)	The route turns northeast and crosses under the railroad tracks.
L	1,550 feet	1.07	Southern Pacific Railroad Tracks to Interstate 10	New line	The route parallels the north side of the proposed storm drain to Interstate 10.
M	370 feet	--	Caltrans Property across Interstate 10 and crossing of Valley Boulevard	New line (potential future bore)	The ductbanks will terminate at the southern side of I-10. The cables from the duct bank will cross I-10 overhead, shading a riser pole with the overhead Segment F. A new riser pole will connect the overhead section with the Segment N ductbank. Pending final design, this segment may consist of an underground bore.
N	1,600 feet	--	Valley Boulevard to San Bernardino County Hospital Property	New line	The ductbanks will go north on the west side of Meridian Avenue to the San Bernardino County Hospital currently under construction, disturbing previously disturbed land along the Meridian Avenue ROW

2.1.1.1 Overhead Transmission Line

The design of the 5.4-mile 66-kV overhead transmission line consists of single-pole construction, wooden (125) and tubular steel (33) poles spaced approximately 175 to 250 feet along the proposed route (Segments A through I). Pole spotting is flexible enough to allow spanning of areas less than 250 feet. Steel poles would be set on concrete piers measuring no more than 40 square feet; this disturbance would be within the 289 square feet (17 feet x 17 feet) disturbance estimated for each pole site. Three steel poles along Segment D would be placed in DSF occupied habitat. The construction of the transmission line consists of drilling a hole from a truck-mounted auger and installing the pole structure. Conductors and miscellaneous electrical equipment would then be installed. The construction equipment required at each pole installation location includes a boring vehicle, backhoe/front-end loader, dump truck, pole and cable/conductor delivery trucks, crane, pickup truck, and cement truck where necessary. Construction work force is estimated at 10 personnel. No grading would be required for access of the construction equipment. The disturbance area at each pole installation site is estimated at 289 square feet (17 feet x 17 feet); the majority of this disturbance would be temporary. Assuming 158 poles would be installed, total disturbance associated with the installation of the overhead transmission line poles is estimated at 1.0 acre. The area disturbed around the installed poles would be restored to its original condition.

2.1.1.2 Underground Distribution Line

Construction of the 12.47-kV underground distribution line consists of excavating a trench approximately 1.0 mile (5,440 feet) long, installing two parallel ductbanks (concrete encased plastic conduits), and backfilling the trench. A 185-foot section would be bored beneath the Southern Pacific Railroad tracks, creating no surface impacts to Segment K. The temporary disturbance width for the majority of the underground distribution line is 30 feet: 15 feet for trenching and 15 feet for storage of excavated material and construction equipment access. Temporary disturbance resulting from construction of the underground distribution line within suitable DSF habitat is expected to be 1.35 acres (see Table 1-2). In the southern portion of Segment J, the ductbanks would be constructed under the access road and substation, thereby minimizing temporary impacts adjacent to and north of the proposed West Substation. In Segment N, the ductbanks would be constructed within the Meridian Avenue right-of-way, resulting in no impacts to suitable DSF habitat north of I-10. Aboveground connections would be made at terminal points. Construction equipment required includes a front-end loader, backhoes, asphalt paver, dump truck, equipment truck, water truck, cement trucks, and pickup trucks. Construction workforce is estimated at 15 personnel.

2.1.1.3 Substation Site

The substation would be located about 550 feet south of Slover Avenue and 135 feet west of an existing Edison distribution line. The proposed substation (i.e., graded site) would occupy 2.2 acres, with 1.9 acres of the site enclosed by a fence. A 23.5-foot-wide gravel access road would be constructed in a previously undisturbed area extending 740 feet from near the intersection of Slover Avenue and Pepper Avenue to the substation. The gravel road would include a 12.4-foot-wide driving surface flanked by 5.6-foot-wide earthen side slopes. Construction of the access road would impact approximately 0.4 acre of previously undisturbed land, of which 0.2 acre would be permanently converted to a driving surface and 0.2 acre would be temporarily disturbed (earthen side slopes). The construction of West Substation and the access road would require site grading. Construction equipment (dozer, grader, front-end loader, backhoe, dump and equipment delivery trucks, crane, welder and water trucks, sheepsfoot compactor, and pickup trucks) would be contained primarily within the fenced area of the substation site and along the gravel access road to the substation for the duration of construction. Two types of lights would be installed at the substation site: low intensity for security purposes and high intensity for emergency purposes. Perimeter lights would be angled downward and inward to minimize visual impact. Construction work force is estimated at 15 personnel.

Traffic during the construction phase would be limited to light vehicles with the exception of major equipment, which would be delivered at varying intervals within the construction period. After completion of construction, traffic would be limited to light vehicles several times a month for the Utility to perform operation and maintenance procedures. Routine maintenance activities would include the following:

- Substation - Visual inspection and instrument testing for equipment integrity, electrical continuity, and overall performance. Approximately two maintenance trips per week (eight per month) would be expected. Maintenance personnel would access the substation via the access road.
- Transmission Line - Visual inspection of poles, lines, and related hardware to determine system integrity, and any subsequent repair or replacement activities. Factors potentially affecting system integrity include storm events, loose or damaged equipment and hardware (i.e., wire ties and insulators), termites, and vandalism.

Insulators could require infrequent washing to prevent flashing caused by the accumulation of airborne particulates from the nearby cement plant. The washing process involves spraying high pressure water upward (from the ground or bucket truck) at each insulator; water would then fall

back to the ground. No detergents, solvents, or other chemicals would be used. Pick-up trucks and bucket trucks would be required for routine maintenance activities, and a water truck would be required for insulator washing. Maintenance personnel would access the transmission line via existing access routes. No insulator washing or other routine maintenance would occur along the transmission line during DSF breeding season (July 23 to September 21).

2.1.1.4 Construction Schedule

Construction of the Colton Transmission Line and Substation Project would begin in September 1995. Grading for the substation and access road would be completed within the first three months of the construction period. Construction of the underground distribution line and overhead transmission line would be completed by April 1996. No construction would occur within suitable or occupied habitat during DSF breeding season (July 23 to September 21).

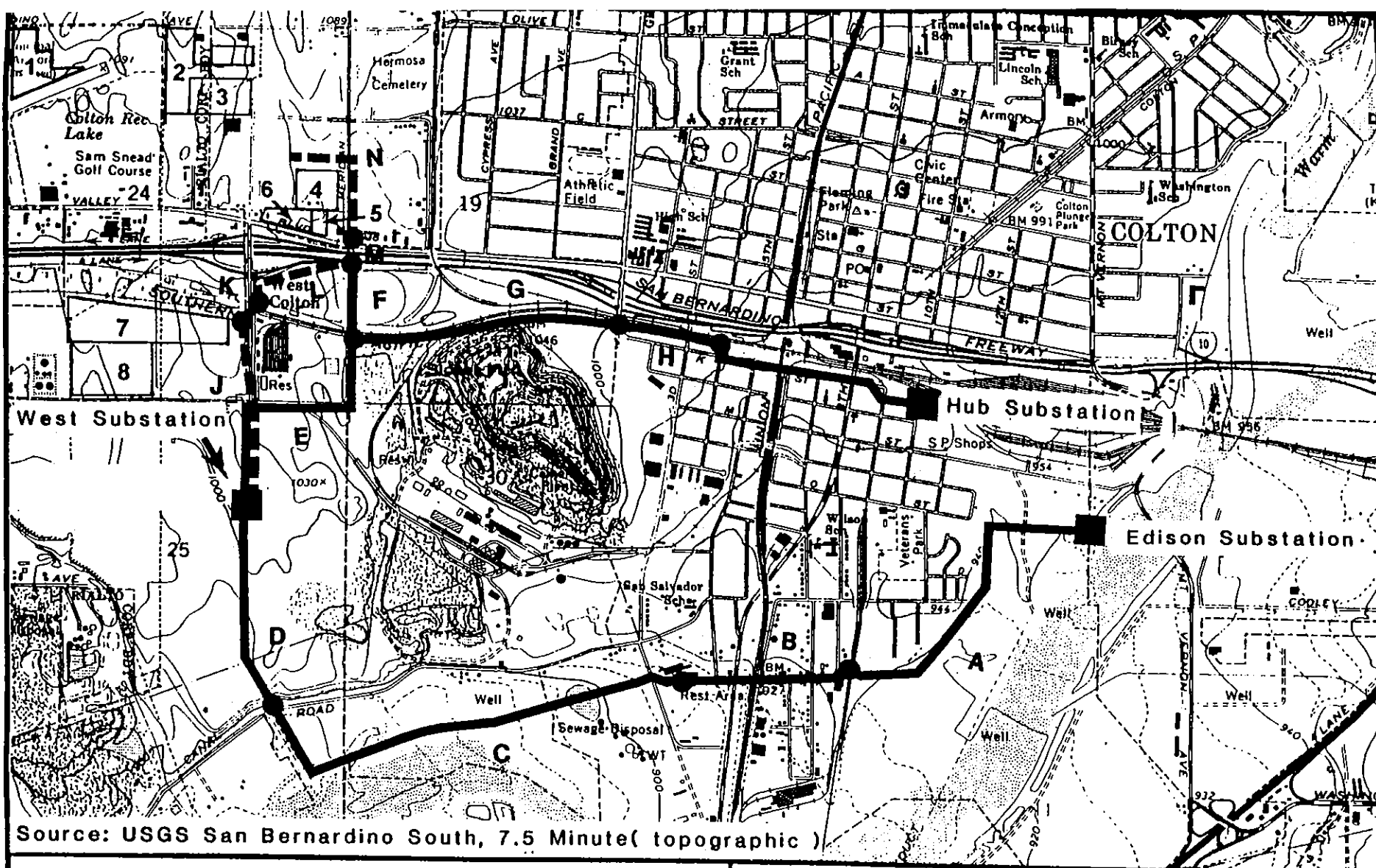
2.2 No Action Alternative

Under the "No Action" alternative, the proposed Colton Transmission Line and Substation Project would be abandoned and there would be no Permit Applicant or Permit Application, and no incidental take of the DSF by the project. Under this alternative, a managed mitigation site for the endangered DSF would not be established. Present disturbance of the project area in the form of habitat fragmentation and isolation, off-road vehicle use, and erosion would remain.

2.3 Alternatives Not Selected for Detailed Analysis

In redesigning the project to reduce the amount of direct take, eight alternate DSF habitat mitigation sites (Figure 2-3) were considered and subsequently eliminated because purchase of these sites was determined to be economically infeasible. Six alternate substation sites were considered during the substation siting process (see Figure 2-1) and eliminated for these reasons:

- Site 1, at the southwest corner of Slover Avenue and Pepper Avenue, was eliminated due to poor drainage characteristics and high visibility impact.
- Site 2, located between Slover Avenue and the Southern Pacific Railroad just west of Pepper Avenue, was eliminated due to high visibility impact.
- Site 3, located adjacent to the railroad tracks south of the San Bernardino Freeway (I-10), was eliminated from consideration due to poor access, flood potential, and high visibility impact.



- (A-I) 66 kV Overhead Transmission Line
- - - (J-N) 12.47 kV Underground Distribution Line
- Route Segment Limits
- (1 - 8) Alternative Mitigation Sites Evaluated



Scale: 1:24,000

Figure 2-3
Colton Transmission Line and Substation Project
Alternative Mitigation Sites Evaluated for the
Delhi Sands Flower-loving Fly

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- Site 4, located on the northwest corner of Slover Avenue and Meridian, was eliminated from consideration due to conflict with the Great American Transportation Corporation's (GATC) expansion plans. This site has since been used for fly mitigation by GATC.
- Site 5, located at the southeast corner of Slover Avenue and Pepper Avenue, was eliminated due to ongoing industrial use (truck traffic) by the California Portland Cement Company.
- Site 6, located on the bluff above Agua Mansa Road, was eliminated due to earthwork requirements and excessive distance from the electrical load center.

3.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

3.1 Regional Context

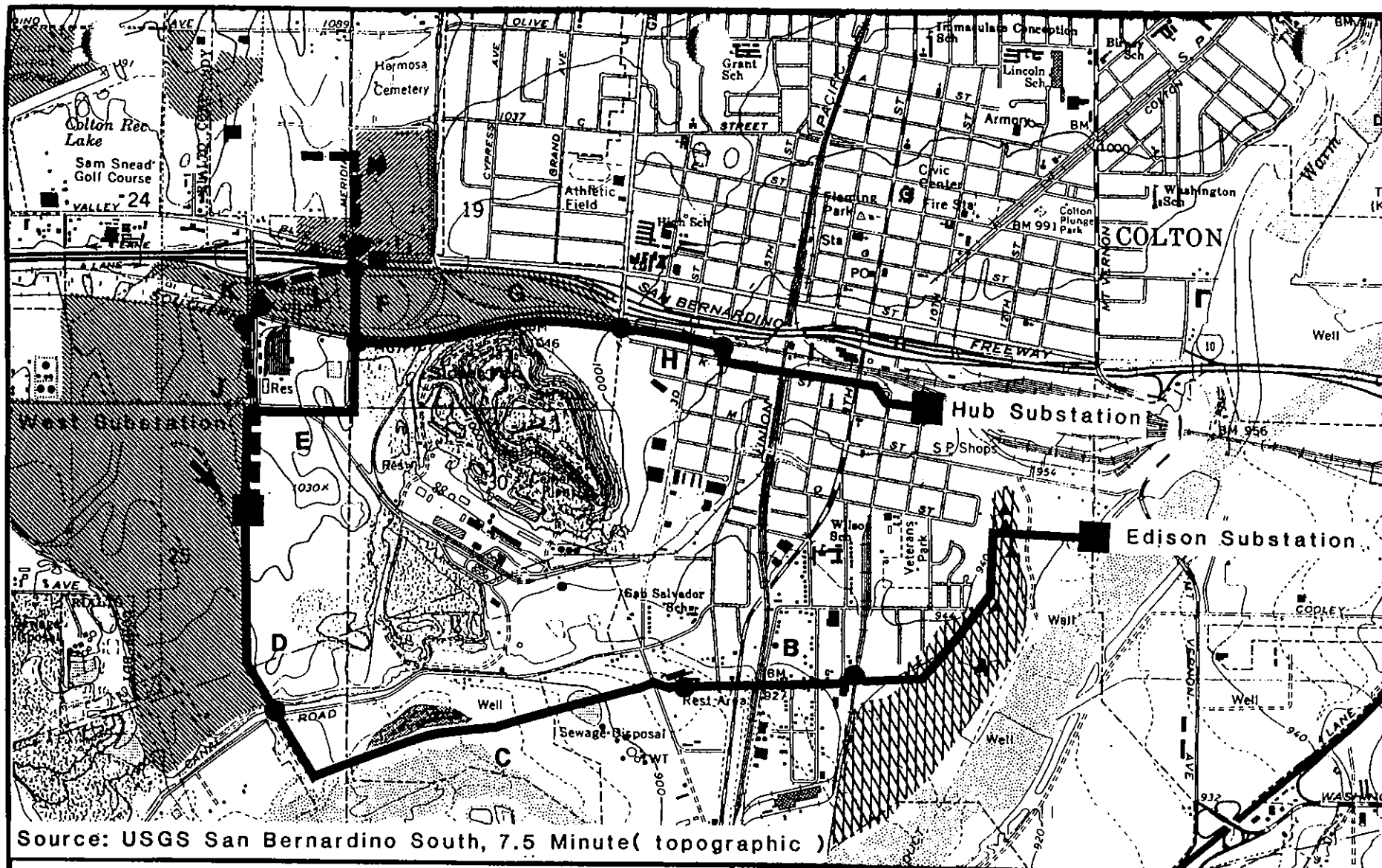
Based on the distribution of the Delhi Sands soil unit the historic range for the DSF once covered approximately 25,600 acres. However, habitat loss and destruction within the historic range has reduced its current range to approximately 500 to 600 acres (2 percent of the historic range). This species is known to occur in isolated pockets of habitat located in western San Bernardino and Riverside Counties, California (Ballmer 1989). Habitat appears to be limited to areas that include Delhi fine sands. Vegetation cover can be absent (in the blow-out areas) or can include a variety of plants including wild buckwheat (*Eriogonum fasciculatum*), croton (*Croton californicum*), telegraph weed (*Heterotheca grandiflora*) ragweed (*Ambrosia psilostachya*), and other grass and forb species. Habitat has been lost and fragmented due to urbanization, agricultural activities, sand mining activities, illegal dumping, off-road vehicles, and invasion of non-native plants (USFWS 1994).

3.2 Project Site Biological Issues

The project area is located in the southern portion of the City of Colton which occurs in western San Bernardino County, California between I-10 and the Santa Ana River. The project area includes residential and commercial development, previously disturbed land, and undeveloped land.

3.2.1 Vegetation

The undeveloped and natural areas have been disturbed by past construction and agricultural activities and support a variety of herbaceous and woody species. Habitat types present include non-native grassland, alluvial fan scrub, and disturbed areas. Figure 3-1 depicts habitat distributions throughout the project area. Herbaceous species currently present in non-native grassland areas include wild oats (*Avena fatua*), red brome (*Bromus rubens*), ripgut brome (*Bromus rigidus*), bermudagrass (*Cynodon dactylon*), wild mustard (*Brassica* sp), filaree (*Erodium cicutarium*), daisy fleabane (*Conyza canadensis*), fiddleneck (*Amsinckia* sp), deerweed (*Lotus scoparius*), cryptantha, and croton. Shrub and tree species that occur in disturbed areas include coyotebush, castor bean (*Ricinus communis*), mule fat, tree tobacco (*Nicotiana glauca*), California buckwheat (*Eriogonum californicum*), willow (*Salix laevigata*), tamarisk, and eucalyptus (*Eucalyptus globulus*). The vegetation present along portions of Segment A potentially support alluvial fan scrub, which is considered a sensitive habitat type by CDFG. However, information



- (A-I) 66 kV Overhead Transmission Line
- - - (J-N) 12.47 kV Underground Distribution Line
- Route Segment Limits
- ▨ Suitable DSF Habitat
- ▲ Santa Ana Woolly-star Populations
- ▨ Water Treatment Ponds with Willow Scrub
- ▨ Alluvial Fan Scrub

Scale: 1:24,000



Figure 3-1
Colton Transmission Line and
Substation Project - Sensitive Biological
Resources Located within the
Project Area

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obtained during plant surveys (Appendix A) indicates that plant species currently present in the alluvial fans predominantly consist of ruderal (weedy) species. Ruderal species present in this area include Spanish pepper (*Schinus molle*), Brazilian pepper (*Schinus terebinthifolius*), mule fat (*Baccharis glutinosa*), tree tobacco, Russian thistle (*Salsola iberica*), telegraph weed, wild mustard, and annual grasses. In addition, the majority of Segment A crosses "fill" material above the alluvial fan area.

3.2.1.1 Listed and Candidate Plant Species

The Santa Ana woolly-star (*Eriastrum densifolium* ssp. *sanctorum*) is federally listed as endangered and state-listed as endangered. The California Native Plant Society (CNPS) also has classified this species as a rare, threatened, or endangered plant in California. Potential habitat for the Santa Ana River woolly-star is characterized by sandy soils and coastal scrub vegetation that occur in alluvial fans. The range of this species is limited to the Santa Ana river floodplain (Munz 1974). One population was observed approximately 2.5 miles north of I-10, near Lytle Creek Wash at 1,250 feet elevation. Potential habitat for the Santa Ana woolly-star occurs in the project area along Segment A. Four populations were observed during October 1994 surveys along and adjacent to Segment A, west of the existing Edison Substation.

Pringle's monardella (*Monardella pringlei*) is a federal candidate-category 1 species and also is classified by the CNPS as a plant that is presumed extinct in California. Potential habitat for this species is characterized by sandy hills at 900 to 1,200 feet elevation with areas of coastal scrub. The range of this species is limited to the Colton area in San Bernardino County, California (Munz 1974). One population was observed in 1941 northwest of the project area. Potential habitat for the Pringle's monardella is present along Segments D, F, J, and L. However, no individuals of this species were observed during October 1994 plant surveys. Based on survey results, no impacts to this species are expected to occur as a result of this project.

Slender-horned spineflower (*Dodecahema leptoceras*) is federally-listed as endangered and state-listed as endangered. The CNPS also has classified this species as a rare, threatened, or endangered plant in California. Potential habitat for the slender-horned spineflower is characterized by sandy soils and coastal scrub vegetation that occur in alluvial fans. The range of this species extends from the San Fernando Valley south to the San Bernardino Valley (Munz -1974). Potential habitat for the slender-horned spineflower occurs in the project area along Segment A. However, no individuals of this species were observed during October 1994 plant surveys. Based on survey results, no impacts to this species are expected to occur as a result of this project.

3.2.2 Listed and Candidate Wildlife Species

3.2.2.1 Delhi Sands Flower-loving Fly

The Delhi Sand flower-loving fly is restricted to the Delhi Sand soil formation of western Riverside and San Bernardino counties. Historically, the DSF probably ranged across the entire 25,000 acres of this soil substrate type. Today, however, the DSF inhabits only about 640 acres of fragmented and degraded habitat within the cities of Colton, Rialto, and adjacent unincorporated areas of San Bernardino County, and a small area in Riverside County near Fontana. A significant risk to the continued survival of the flower-loving fly exists as a result of ongoing habitat destruction by plowing, discing, grading for urban development, off-road vehicle use, invasion by exotic vegetation, and random demographic events. Due to the imminent danger of extinction, the USFWS listed the DSF as endangered on September 22, 1993 (58 FR 49881).

The DSF is in the Dipteran family Mydidae, including some of the largest flies in North America. This species is approximately one inch long, orange-brown in color, and has dark brown oval spots on the upper surface of the abdomen. The DSF is a rapid flier and can hover like a hummingbird while using its long proboscis to drink nectar from flowers. In flight the DSF produces a loud, high pitched whine, and is usually heard before it is seen. The adult flight period lasts only a few weeks in August and September.

The flower-loving fly requires the presence of fine, sandy soil with relatively sparse vegetation, usually composed of native species, such as wild buckwheat (*Eriogonum fasciculatum*), croton (*Croton californicus*), and telegraph weed (*Heterotheca grandiflora*). The importance of fine sand is apparent from the ovipositional behavior of the females; they insert their abdomens deep into the sand during oviposition (Rogers and Mattoni 1993). Larval development apparently takes place in the sand. Soil disturbances, such as discing and grading associated with rural and urban development are the primary causes of habitat loss and degradation.

It is estimated that 97.5 percent of the historic habitat for the flower-loving fly has been eliminated, and that the total adult population of the fly is on the order of only a few hundred individuals. The six known colonies occur within an 8-mile distance on approximately 640 acres of privately owned land. All of the remaining, potentially suitable habitat for the flower-loving fly is currently subject to agricultural, residential, and commercial development. The small size of colonies of the flower-loving fly makes this species especially vulnerable and more easily extirpated from individual sites due to any of the above factors.

The DSF occurs in an extremely restricted range and in disjunct populations whose long-term persistence may depend upon intercolony movement. Loss of habitat required by adult and early stages will make this movement more difficult by increasing the distances the insects must travel to successfully reach other colonies. The few remaining colonies are surrounded by intense urban development and invasive exotic vegetation which also may prohibit long distance movement by the flies.

In addition, only one of the extant sites is protected, a small isolated ten acre site set aside as mitigation for the County's hospital site. During the course of preparing the listing, one of the larger sites was destroyed by development and is no longer able to support the DSF. Another location where the densest population of DSF occurred was bisected and reduced in total size. The large remaining habitat in the Agua Mansa Industrial Enterprise area, which contains the majority of the remaining DSF habitat, is surrounded by petroleum facilities, railroad storage yards, a landfill, a cement quarry, and a sewage treatment plant.

Any one of the threats noted above could at any time result in losses that would be irreversible and reduce the population size to a point where survival and recovery is no longer feasible. Therefore, for all of the above-mentioned reasons it is imperative that remaining habitat and habitat linkages, whatever their condition, be protected to ensure the survival of this species.

3.2.3 Other Potential Sensitive Wildlife Species

No site-specific surveys were conducted for these species. Based upon the known habitat distributions and associations of these species, they potentially could occur within the project vicinity. Since the temporary and permanent disturbance of habitat associated with the proposed project is only 4.6 acres, impacts to these species would be minimal. In addition, mitigation measures would reduce potential impacts to these species. Mitigation measures include: (1) preconstruction surveys to aid in pole placement outside of potential activity areas; (2) construction timing outside breeding or activity areas; and (3) deterrence of unauthorized access the habitat areas.

Mammals

The Stephens' kangaroo rat (*Dipodomys stephensi*) is federally-listed as endangered and state-listed as threatened. This species inhabits dry, open grassland or a shrub and grassland combination. Its range is restricted to northern San Diego County, western Riverside County, and a small portion of southeastern San Bernardino County (Bleich 1977). Populations are generally scattered and disjunct. Habitat loss is the primary cause of population declines. Potential habitat for this species is present in the project area along Segments C-G, J, and L.

One population was found in 1988, approximately 3.0 miles southeast of the project area. Based on further habitat evaluations and discussions with agency specialists, this species is not expected to occur in the project vicinity. The current distribution of this species does not extend north of the Santa Ana River.

The San Bernardino Merriam's kangaroo rat (*Dipodomys merriami parvus*) is a federal candidate-category 1 species. This species also is listed as a Species of Special Concern (SSC) by the CDFG. The range of this species is restricted to western San Bernardino and Riverside Counties (Gustafson 1994). This species inhabits alluvial fan scrub habitat with light sandy to rocky soils at low elevations. Potential habitat in the project area for this species is present along Segment A.

The Los Angeles pocket mouse (*Perognathus longimembris brevinausus*) is a federal candidate-category 2 species. This species also is a SSC and was given a "highest priority" ranking for future conservation efforts by CDFG in 1986 (Williams 1986). Populations of the Los Angeles pocket mouse are found in southern California coastal basins in grass/desert habitat. This species prefers open ground with fine, sandy soils (Grinnell 1933). It is restricted to lower-elevation grasslands and coastal-sage associations in the Los Angeles Basin. These habitat types extend to approximately Burbank and San Fernando in the northwest to San Bernardino in the northeast and Cabazon, Hemet, and Aguanga in the east and southeast. Their geographic limits in the southwest are not clear, but probably lie somewhere near the Hollywood Hills (Williams 1986). Habitat loss due to urbanization and cultivation of the land within the interior valleys of the Los Angeles Basin is the major cause of decline of this species. The current population status of the Los Angeles pocket mouse is not well known. Potential habitat for the Los Angeles pocket mouse in the project area is present along Segments A, C-G, J, and L.

Birds

The western burrowing owl (*Athene cunicularia*) is a federal candidate-category 2 species. This species ranges mostly west of the Mississippi River from southern Canada to central Mexico. General habitat associations include mountain and alpine meadows, Great Basin shrubsteppe, mid- to short-grass prairie, Chihuahuan Desert scrub, and Mojave Desert scrub. The western burrowing owl nests in the abandoned burrows of animals such as prairie dogs and ground squirrels. Nests are usually lined with dried dung, dry grass, weeds, pellets, and/or feathers. When not disturbed, this owl will use the same burrow each year. The burrowing owl feeds on insects and small animals, and will lay seven to nine eggs between March and July (Terres 1991). Potential habitat occurs along Segments A, D, and E. Based on habitat and species distribution, the likelihood of occurrence within the project area is low to moderate.

Reptiles

The coast patch-nosed snake (*Salvadora hexalepis virgultea*) is a federal candidate-category 2 species and a CDFG SSC. Potential habitat for this species includes grassland, chaparral, sagebrush plains, and desert scrub in both sandy and rocky areas on lower slopes of mountains. Forage for this species includes small mammals, lizards, and reptile eggs (Stebbins 1985). The range for this species extends south from the Sierra Madre Mountains located in southwestern California to the northwestern portion of Baja California. The project area may include habitat for the coast patch-nosed snake along Segments A, C-G, J, and L. Based on habitat and species distribution, the likelihood of occurrence within the project area is low.

The northern red diamond rattlesnake (*Crotalus ruber*) is a federal candidate-category 2 species and a CDFG SSC. Potential habitat for this species includes rocky shrublands and occasionally in grassland and cultivated areas. Forage for this species includes ground squirrels, rabbits, and birds (Stebbins 1985). The range of this species extends south from the southern portion of the San Gabriel Mountains located in southwestern California to the Sierra De La Giganta Mountains in Baja California. The project area may include habitat for the northern red diamond rattlesnake along Segments A, C-G, J, and L. Based on habitat and species distribution, the likelihood of occurrence within the project area is low.

The San Bernardino ringneck snake (*Diadophis punctatus modestus*) is a federal candidate-category 2 species that inhabits woodland, forest, grassland, and chaparral. In arid regions, this species inhabits areas adjacent to water courses. This snake feeds on salamanders, small frogs, lizards, small snakes, slugs, and worms (Stebbins 1985). The range of this species extends west from the San Gabriel Mountains, Vallecito Mountains, and Santa Rosa Mountains located in southwestern California to the Pacific Ocean coast. The project area may include habitat for the San Bernardino ringneck snake along Segments A, C-G, J, and L. Based on habitat and species distribution, the likelihood of occurrence within the project area is low.

The coastal rosy boa (*Lichanura trivirgata rosafusca*) is a federal candidate-category 2 species that inhabits rocky shrublands, desert oases, and areas adjacent to permanent or intermittent streams. This snake feeds on small mammals and birds (Stebbins 1985). The range of this species extends south from the San Gabriel Mountains located in southwestern California to northwestern Baja California. The project area may include habitat for the coastal rosy boa along Segments A, C-G, J, and L. Based on habitat and species distribution, the likelihood of occurrence within the project area is low.

The San Diego horned lizard (*Phrynosoma coronatum blainei*) is a federal candidate-category 2 species and also is listed by the CDFG as a SSC. Habitat for this species is characterized by scrubland, grassland, and woodland especially lowlands near sandy washes and scattered shrubs. This lizard feeds on ants and other various insects (Stebbins 1985). The range of this species extends south from southwestern California to northwestern Baja California (CNDDDB 1994). The project area includes potential habitat for the San Diego horned lizard along Segments A, C-G, J, and L. Based on habitat and species distribution, the likelihood of occurrence within the project area is low.

Amphibians

The western spadefoot toad (*Scaphiopus hammondi*) is a federal candidate-category 2 species and a CDFG SSC. Potential habitat for this species includes open, treeless grasslands, or mixed woodlands where temporary pools form. This toad feeds on insects, worms, and other invertebrates (CDFG 1988). The range of this species extends south from the Central Valley and adjacent foothills to the coast ranges in southwestern California and northwestern Baja California (CDFG 1988). The project area includes potential habitat for the western spadefoot toad along portions of Segment A. Based on habitat and species distribution, the likelihood of occurrence within the project area is low.

Insects

Greenest tiger beetle (*Cicindela tranguerica viridissima*) is a federal candidate-category 1 species that inhabits open, sandy areas on beaches, open paths, lanes, or mud flats. Limited data exists for this species regarding specific habitat requirements and distribution. One population has been documented to occur along the banks of the Santa Ana River downstream of the project area. Based on habitat and species distribution, the likelihood of occurrence within the project area is low.

3.3 Project Site Cultural Resource Issues

A review of available archaeological site archives, historical maps, and documents concerning the proposed project area was conducted at the Archaeological Information Center, San Bernardino County Museum. Based on the review, field reconnaissance was conducted in April and May 1994.

Portions of (CA-SBR-1576) were encountered in the project area (southern end of Segment D) during the field reconnaissance. The site was originally recorded in 1938 and has been described as 3,000 feet in diameter, consisting of scattered chipped and groundstone artifacts,

some apparent faunal shell, and possible human remains. A testing program was initiated in 1988, which included surface collection of artifacts and subsurface testing by mechanical trench. At that time, the site was interpreted as highly disturbed, of limited vertical extent, and little scientific interest. Elements of CA-SBR-1576 have been encountered in all wind-eroded areas of stabilized dune facies, which may be taken as indicative of further buried components in the immediate vicinity. CA-SBR-1576 is not listed on the National Register of Historic Places (NRHP).

An additional cultural resource was noted during the field reconnaissance as being within the proposed project area. This resource includes structural features associated with an historical mill site (CT-1) located along Segment G. Construction of the mill began in 1892, and three remnant elements of the mill are still in evidence. Extensive damage to the structures has occurred as a result of demolition activities at the Portland property. CT-1 is not listed on the NRHP.

During the September 1994 field reconnaissance, another cultural resource was located in the vicinity of Segment A. The resource location is marked by an extensive historical landfill and is actively being used as a clandestine dump site. The resource deposit extends south approximately 400 meters from M Street and is bound on the east by Fogg Street and on the west by a residential development. Cultural materials in the area include architectural demolition rubble and household discards. Some items were directly associated with buried deposits and others were associated with surface concentrations or piles. Household ceramics and bottle glass were noted in close proximity to small excavations apparently dug by bottle collectors. One such excavation contained an abandoned screen similar to the screens used to sift artifacts from surrounding soils. No materials of sufficient age were found during the site investigation, however, the interest of amateur collectors, the continued use of the area as a disposal site with the possibility of buried materials of an earlier origin being deposited within the area lend potential to the site as having some cultural significance.

3.4 Project Site Soil Issues

Soils in the project area are associated with the Hanford-Greenfield-San Emigdio and Tujunga-Soboba soil associations (Soil Conservation Service [SCS] 1980). These associations are dominantly brownish soils that are moderately coarse to coarse-textured throughout the soil profile. The Hanford-Greenfield-San Emigdio association occurs on nearly level to moderately sloping, well-drained, very deep soils on alluvial valley floors and fans. The Tujunga-Soboba association occurs on nearly level to moderately sloping, somewhat excessively drained and excessively drained, very deep soils on alluvial valley floors. Soil series that occur in the project area include Psammets and Fluvents (frequently flooded), Tujunga gravelly loamy sand (0 to 9 percent slopes), San Emigdio gravelly sandy loam (2 to 9 percent slopes), San Emigdio fine

sandy loam (2 to 9 percent slopes), Delhi fine sand, and Tujunga loamy sand (0 to 5 percent slopes).

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Proposed Action

DSF habitat is restricted to areas with Delhi fine sands. No detailed field surveys were conducted specifically for the project area. For the purposes of this EA, all suitable habitat was considered occupied. However, southern portions of Segment D and the proposed mitigation site are known to be occupied by DSF (Ballmer 1989).

4.1.1 Direct Impacts

Construction activities in the project area would result in the direct loss of 2.4 acres of suitable habitat and temporary disturbance of 2.2 acres of suitable or occupied habitat. These activities could result in take of DSF larvae. Construction of the West Substation (1.9 acres), parking area (0.3 acre) and the access road (0.2 acre) would eliminate 2.4 acres of habitat from possible future use by the DSF. Construction activities along the overhead transmission line, underground distribution line, and portions of the substation and access road would temporarily disturb 2.2 acres of this habitat and may limit the future use of this area by the DSF. Less than 0.1 acre of alluvial scrub habitat would be temporarily disturbed (Table 4-1). Except for the actual "footprint" of the poles, disturbance would be temporary.

4.1.2 Indirect Impacts

The increased electrical capacity of the proposed substation project could enable increased growth on suitable DSF habitat within Colton's 2,700-acre electrical distribution service area, potentially creating indirect impacts to DSF. By increasing the electrical supply within the service area, an opportunity for additional development of suitable DSF habitat could be created. The City of Colton has the rights to service all customers within their service area if they have the capability. However, if the City is not able to provide service (i.e., does not have the capability), then another supplier could be contracted to supply electrical service. Within the service area, other suppliers could likely provide service to the area (to a limited degree) without constructing a new substation, thereby allowing for increased growth. Therefore, the net effect of the proposed action enabling increased growth in the service area is not significantly different than the No Action Alternative.

Table 4-1

**Colton Transmission Line and Substation Project
Potential Habitat Disturbance**

Species	Segment	Total Potential Disturbance (acres)	Temporary Disturbance (acres)	Permanent Disturbance (acres)	Comments
Delhi Sands Flower-loving fly (DSF)					
	D	0.12	0.12	.0031	
	E	0.13	0.04	--	Assuming 6 poles, 289 square feet disturbance at each pole
	F	0.04	0.04	.0004	Assuming 6 poles, 289 square feet disturbance at each pole
	J	0.28	0.28	--	Assuming 2290 feet disturbance
	L	1.07	1.07	--	Assuming 1550 feet disturbance
	N	--	--	--	All Impacts occur within previously disturbed habitat along the Meridian Ave. ROW
	Substation	2.84	0.38	2.16	
	Access Road	0.40	0.19	0.21	Assuming 740 feet long by 23.5 feet wide
San Bernardino Merriam's kangaroo rat (SBK)					
	A	0.07	0.07	.0004	Assuming 11 poles, 289 square feet disturbance at each pole. Portions of this segment occur in fill areas with no suitable habitat

Table 4-1 continued

Species	Segment	Total Potential Disturbance (acres)	Temporary Disturbance (acres)	Permanent Disturbance (acres)	Comments
Los Angeles pocket mouse					
	A	0.19	0.19	.0004	Assuming 29 poles, 289 square feet disturbance at each pole
	C	0.20	0.20	--	Assuming 30 poles, 289 square feet disturbance at each pole
	D	0.12	0.12	.0031	Assuming 18 poles, 289 square feet disturbance at each pole
	E	0.13	0.04	--	Assuming 6 poles, 289 square feet disturbance at each pole
	Substation	2.84	0.38	2.16	
	Access Road	0.40	0.19	0.21	Assuming 740 feet long by 23.5 feet wide
	F	0.04	0.04	.0004	Assuming 6 poles, 289 square feet disturbance at each pole
	G	0.09	0.09	--	Assuming 13 poles, 289 square feet disturbance at each pole
	L	1.07	1.07	--	Assuming 1550 feet disturbance
Santa Ana wooly-star					
	A	0.07	0.07	.0004	Assuming 11 poles, 289 square feet disturbance at each pole. Portions of this segment occur in fill areas with no suitable habitat

4.1.3 Cumulative Impacts

Historically, the DSF inhabited approximately 25,600 acres in San Bernardino and Riverside Counties, California. Currently, approximately 2 percent (500 to 600 acres) of this habitat remains. This reduction in habitat has been caused by urbanization, agricultural activities, sand mining activities, illegal dumping, off-road vehicles, and invasion of non-native plants. Implementation of the Proposed Action would result in the permanent loss of 2.4 acres of suitable DSF habitat and temporary disturbance of an additional 2.2 acres of suitable or occupied DSF habitat. Therefore, 4.6 acres of suitable or occupied DSF habitat would be impacted, which represents less than 1 percent of the remaining DSF habitat. It is anticipated that the temporary disturbance areas would eventually support suitable habitat following reclamation. Given that only 2 percent of the historical habitat remains, and coupled with additional impacts to DSF that are reasonably foreseeable future actions within or outside of Coltons' service area, the proposed impacts to 4.6 acres of suitable DSF habitat could be considered a significant cumulative impact to the DSF.

As currently contemplated, the City of Colton's participation (as well as other cities with suitable DSF habitat) in the Valley-Wide Multi-Species Habitat Conservation Plan to conserve wildlife (including the DSF) and plant species of concern in the San Bernardino Valley will eventually be the avenue to address these cumulative effects. However, until or unless the valley-wide HCP takes effect, ongoing and new activities will continue to incur cumulative impacts unless the County and all cities throughout the range of DSF require mitigation measures that avoid and offset impacts to the species. The City of Colton could mitigate cumulative impacts only within its City limits by continuing to consult with the USFWS on a case-by-case review and approval of project proposals on Delhi Sands within the 2,700-acre service area. This interim review process would mitigate cumulative effects within the City's jurisdiction to the extent that the City concurred with and implemented USFWS recommendations to avoid and offset impacts to DSF.

4.1.4 Mitigation Measures

A Habitat Conservation Plan (HCP) and an Implementation Agreement (IA) have been prepared in conjunction with this EA and are incorporated herein by reference. The IA is a two-party agreement between the USFWS and the Permit Applicant, which provides for the implementation of the HCP. The HCP, EA, and IA include the following actions by the Permit Applicant to minimize the project impacts on the taking of DSFs. The Permit Applicant agrees to:

- Avoid disturbing suitable or occupied habitat outside the project area, and educate employees regarding disturbance avoidance and minimization. Disturbance includes,

but is not limited to, such activities as grading, stockpiling and excavating soil, parking and storing equipment, and ingress and egress of vehicles and personnel.

- Conduct DSF surveys in occupied habitat (Segment D) to determine pole placement and access routes prior to the disturbance of DSF habitat. Surveys would be conducted by a USFWS-approved biologist between August 15 and September 15. At the end of the adult flight season, the biologist would provide the city of Colton and USFWS with a map of sightings and suggested locations for pole placement and access routes.
- Perform cultural resource monitoring along Segment D (site CA-SBR-1576) during construction.
- Provide an annual list and description of non-emergency operation and maintenance activities to the USFWS for approval in January each year. The project descriptions would implement the following avoidance and minimization measures to maximum extent practicable for each project and for all maintenance and operations for as long as USFWS determines the mitigation site is occupied or useful habitat for the DSF. This should include measures to maintain or enhance habitat quality within the ROWs, while still allowing for maintenance and operations.
- Consult with USFWS regarding unavoidable impacts to DSF habitat that occur as a result of emergencies.
- Conduct pre-construction surveys by a qualified biologist for pole placement and access routes in alluvial fan scrub areas. All direct impacts to listed and candidate plant populations and San Bernardino kangaroo rat burrow concentration areas would be avoided.
- Notify USFWS regarding proposed development projects within the jurisdiction of the City of Colton. Proposed development projects in Delhi Sands would be reviewed and approved by USFWS on a case-by-case basis.
- Comply with any other measures set forth herein and required by the USFWS as being necessary or appropriate for the purposes of the HCP, including any measures determined by the USFWS and Permit Applicant to be necessary to deal with unforeseen circumstances.

Mitigation for the DSF would include the restriction of construction and maintenance activities in suitable or occupied habitat during the breeding period (July 23 to September 21), and habitat acquisition for the permanent loss and temporary disturbance of occupied habitat. The Permit Applicant would acquire 7.5 acres of occupied DSF habitat for the protection and preservation of the species (Figure 4-1). A total of 4.8 acres would be acquired for the loss of suitable habitat and 2.2 acres for the temporary disturbance of suitable or occupied habitat. An additional 0.5 acre also would be acquired for use as a contingency, in the event that additional disturbance to DSF habitat occurs during construction, operation, or maintenance activities. The temporary disturbance areas would be reclaimed and reseeded to pre-disturbance conditions. Excavated soils would be double ditched (soil horizon segregation) to ensure that the surface soils are replaced following construction. Habitat acquired by the Permit Applicant would be located 0.4 mile west of the proposed West Substation (Figure 4-1).

A chain link fence exists along or near the northern and eastern boundary of the proposed mitigation site. This fence would be maintained to minimize the probability of physical disturbances to the habitat. If monitoring indicates that habitat disturbance is occurring, additional fencing may be necessary to secure the site. Installation costs, if required, would be incurred by the City of Colton. Signs would be placed on the fence informing the public that this area is a protected habitat and is considered off-limits to the general public. This area also would be monitored on a monthly basis by the Permit Applicant to ensure that the habitat has not been disturbed and the existing fence is maintained.

A non-wasting management endowment would be provided to monitor and manage the mitigation property. The City of Colton would be responsible for administering the fund, which initially would be established in the amount of \$26,250. At the end of each of the first three years of the Permit period, \$13,250 would be added to the fund by the City of Colton. A matching amount could be withdrawn during each of the first three years. The City of Colton would use this fund to develop a USFWS approved conservation site management plan within the first year of the permit period. The management plan would address site enhancement, site maintenance, and/or research activities designed to benefit the survival and recovery of the SDF. Monies not withdrawn during this period would remain in the fund and add to the principle. The total expense to the City of Colton would be \$66,250 over three years. After the first three years, the fund is expected to generate a minimum \$1,300 per year based on an estimated 5 percent interest rate. The interest generated would be used for annual DSF monitoring, fence maintenance, and signage. The City would be responsible for managing the site until the San Bernardino Valley Wide Multiple Species Habitat Conservation Plan (MSHCP) is completed. At that time, the title and management would be turned over to an approved manager or the reserve. The plan would be carried out with annual review by USFWS until a long-term manager, as part of the regional plan, is approved. The acquisition and management of the mitigation site

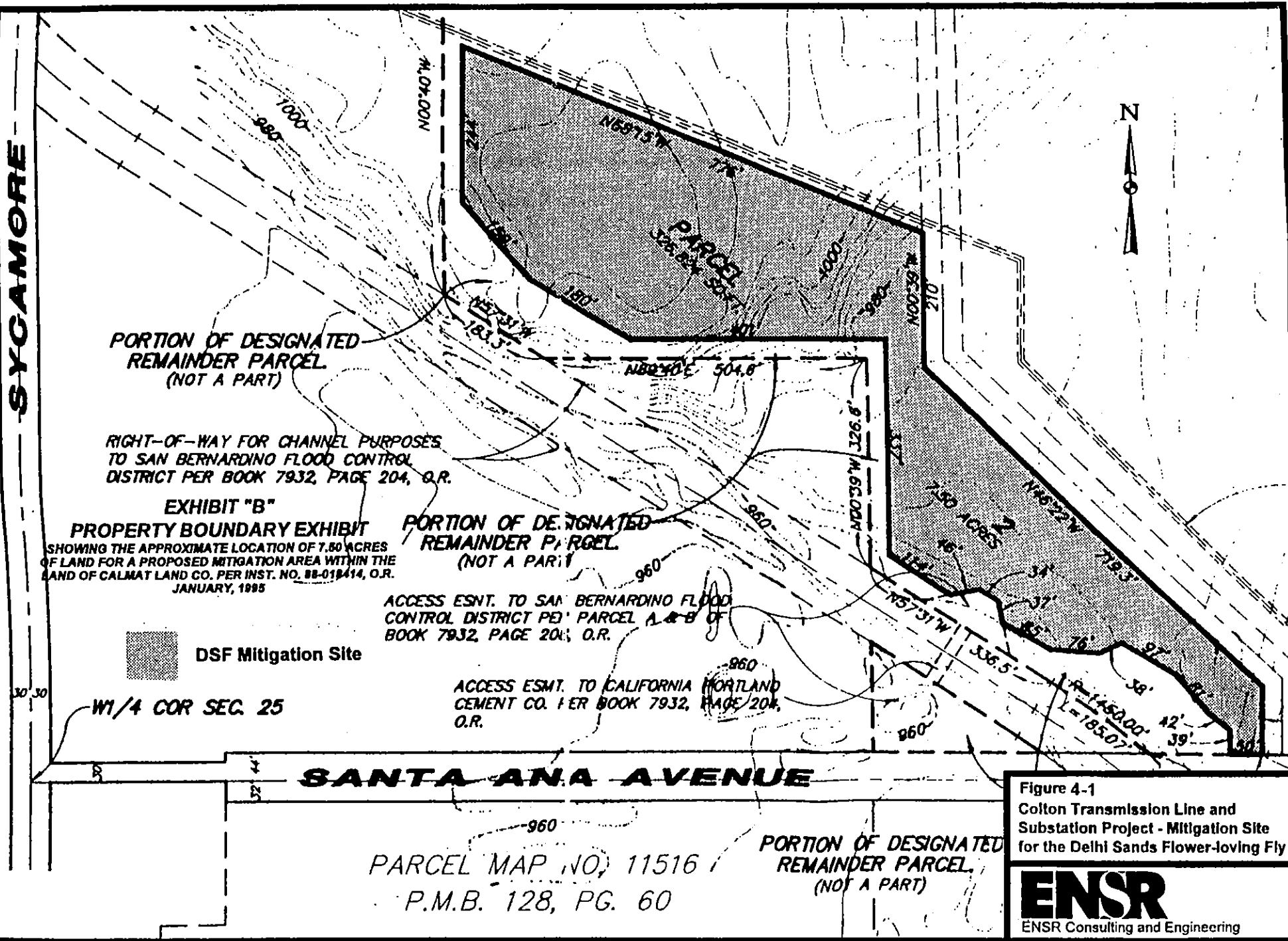


Figure Frame

4-1 Colton Transmission Line and Substation Project - Mitigation Site for the Delhi Sands Flower-loving Fly

Pages: 1

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would be permanent for as long as USFWS determines the site is occupied or useful habitat for the DSF. Issues to be discussed in the annual report include results of the DSF surveys, fence upkeep, and suggestions for enhancement of DSF on-site management. Should the MSHCP not be implemented, the annual monitoring, reporting, and maintenance would be continued by the City or a USFWS-approved land manager.

Mitigation for cultural resources would include spanning CT-1 and the historical landfill with overhead lines. CA-SBR-1576 is larger in size. Therefore, in order to mitigate potential impacts to this resource, construction staging areas and pole locations would be established prior to construction activities. If it is determined that avoidance of the resource is not feasible, archaeological surveys would be conducted prior to installation to determine the potential presence of artifacts. Additionally, a qualified monitor would be retained to observe construction activities in this area.

During construction activities, surface and subsurface soils will be disturbed within the construction ROW. However, the project components would be constructed using best engineering practices which will reduce the number of structures in moderate to steep slope areas, amount of soil compaction and erosion, and exposure of people and property to geologic hazards. The construction of the project would not create unstable earth conditions, changes in geologic substructures, or destruction/modification of unique geologic, natural, or man-made features.

Mitigation for the San Bernardino Merriam's kangaroo rat, and Los Angeles pocket mouse includes conducting habitat evaluations prior to construction along Segments A, D through G, J, and L to identify concentrations of active burrows in the construction ROW (Segment C has already been constructed). If concentrations of active burrows for these species are observed in the construction ROW or access road, construction design (i.e., pole placement) and activities (i.e., temporary access roads) would be modified to avoid direct impacts to the active burrow areas. In addition, construction activities would occur only during daytime hours to avoid potential impacts during the nocturnal activity period. Holes for pole placement would not be drilled and left open overnight, thereby avoiding the potential trapping of these species. Impacts to less than 0.1 acre of habitat (i.e., alluvial fan scrub) during installation of the overhead transmission line along Segment A would be mitigated by constructing or installing barriers along the existing dirt access roads from Fogg Street. This would restrict vehicle access and reduce further degradation of this habitat.

Mitigation for the Santa Ana woolly-star would include the avoidance of the populations by spanning the alluvial wash west of the Edison substation (Segment A). Pole installation sites outside the wash would be accessed along existing roads. As noted above, impacts to alluvial fan scrub would be mitigated by controlling illegal access through the construction or installation of barriers along existing dirt access roads.

4.2 No Action Alternative

Under the "No Action" alternative, the proposed Colton Transmission Line and Substation Project would be abandoned and there would be no Permit Applicant or Permit Application, and no incidental take of the DSF by the project as defined by the ESA. Under this alternative, a managed mitigation site for the endangered DSF would not be established. Present disturbance of the project area in the form of habitat fragmentation and isolation, off-road vehicle use, and erosion would remain. Indirect and cumulative impacts are expected to be similar to the Proposed Action alternative.

Additional consequences include the following:

- The opening of the new San Bernardino Hospital would be delayed until other transmission, distribution, and substation facilities could be constructed.
- Southern California Edison (SCE), a potential other supplier, would need to build similar facilities to those described in this project, and therefore would result in similar environmental disturbance.
- The City of Colton would encounter significant financial hardship by being unable to serve the new hospital.
- Without consideration of the facilities described, the City would be unable to meet incremental insitu load growth of the existing electric system customers in a reliable and energy efficient manner.

4.3 Comparison of Impacts

Table 4-2 summarizes the potential impacts associated with the Proposed Action and No Action Alternatives. The table then summarizes any potentially significant adverse effects and associated mitigation measures of the Proposed Action and the No Action Alternative for the issue areas. In this way, the key issues surrounding each of the alternatives are presented, providing a clear basis for choice among options by the decision maker and the public.

Table 4-2

**Colton Transmission Line and Substation Project
Summary Impact Comparisons Between Proposed Action and No Action Alternative**

	Proposed Action	No Action
DSF and Habitat (Habitat based on soils)	Permanent loss of 2.4 acres and temporary loss of 2.2 acres of suitable or occupied habitat would result in the incidental take of 4.6 acres. To mitigate this take, 7.5 acres of occupied DSF habitat would be permanently preserved and managed. Preconstruction surveys would be conducted to determine pole placement. Temporary disturbance areas would be reclaimed and reseeded to pre-disturbance conditions. Excavated soils would be double-ditched to ensure that surface soils are replaced following construction.	The proposed incidental take would not occur. However, if approved, another power supplier would build similar facilities resulting in similar disturbance. The proposed conservation site would not be acquired and managed for the DSF. Present disturbance in the form of habitat fragmentation and isolation, OHV use, and erosion would remain. Indirect and cumulative impacts are expected to be similar to the proposed action alternative.
Social Considerations	Project implementation would allow the City of Colton to provide power to the new hospital and meet incremental growth requirements of the existing electrical system customers in a reliable and energy efficient manner.	Opening of the new hospital would be delayed until other transmission, distribution, and substation facilities could be built. The City would be unable to meet incremental growth requirements of the existing electrical system customers in a reliable and energy efficient manner.
Other Sensitive Species	Less than .01 acre of alluvial fan scrub habitat supporting San Bernardino Merriam's kangaroo rat, Los Angeles pocket mouse, and Santa Ana wooly star habitat would be permanently disturbed. Preconstruction surveys would be conducted along Segments A, D through G, J, and L; active burrow areas would be avoided. Santa Ana wooly star mitigation consist of conducting preconstruction surveys and avoidance of populations by spanning the alluvial wash west of the Edison substation (Segment A). Impacts to alluvial fan scrub would be mitigated by installing barriers along existing dirt access roads.	The proposed project would not occur. However, another power supplier, if approved, would build similar facilities resulting in similar disturbance. Present disturbance in the form of habitat fragmentation and isolation, OHV use, and erosion would remain.

Table 4-2 continued

	Proposed Action	No Action
Cultural Resources	Three cultural resource sites occur within the project area. The mill site (CT-1) on Segment G and the historic landfill on Segment A would be spanned by overhead lines. Impacts to CA-SBR-1576 along Segment D would be mitigated by establishing staging areas and pole locations prior to construction. Monitoring would be performed along Segment D during construction.	The proposed project would not occur. However, another power supplier, if approved, would build similar facilities resulting in similar disturbance. Present disturbance in the form of OHV use, erosion, and clandestine dumping would remain, potentially threatening the integrity of the sites.

5.0 AGENCIES AND INDIVIDUALS CONSULTED

The following people were consulted during the development of this Environmental Assessment.

U.S. Fish and Wildlife Service

Mr. Jeff Newman, Fish and Wildlife Biologist (Carlsbad Office)
Dr. John Bradley, Fish and Wildlife Biologist (Carlsbad Office)
Ms. Laura Hill, Fish and Wildlife Biologist (Portland Regional Office)
California Department of Fish and Game (Long Beach Regional Office)

Mr. Curt Taucher, Environmental Services Director
Mr. John Gustafson, Fish and Wildlife Biologist
Ms. Dee Sudduth, Environmental Specialist

City of Colton Electric Utility

Mr. Nitin Modi, Principal Electrical Engineer
Mr. Tom Clarke, Electric Utility Director

City of Colton Community Development Department

Ms. Lisa Moran, City Planner

Black and Veatch

Mr. Don Mundy, Project Engineer
Mr. Andy Rawlins, Project Engineer

6.0 REFERENCES CITED

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- Terres, J. K. 1991. The audubon Society Encyclopedia of North American Birds. 1,109 pp.

United States Fish and Wildlife Service (USFWS). 1994. Letter from Gail Kebetich (USFWS Field Supervisor-Carlsbad Field Office) to Lisa Moran (City of Colton-Community Development Department/Planning Division). 2 pp.

Williams, D. F. 1986. Mammalian Species of Special Concern in California. State of California Dept. of Fish and Game. 112 pp.

APPENDIX A
PLANT SURVEY RESULTS



California Lutheran University

60 West Olsen Road
Thousand Oaks, California 91360-2787
805/492-2411

October 24, 1994

ATTN: Mr. Philip Hackney

ENSR Consulting and Engineering
1716 Heath Parkway
Fort Collins, CO 80524

Dear Phil,

Enclosed is the field survey summary and a plant list of species found at the Colton project. Also enclosed is the aerial photograph with the area outlined where the Eriastrum densifolium ssp. sanctorum was found. No other rare species were observed.

Feel free to call if you have any questions.

Sincerely,

Barbara J. Collins
Professor of Biology
805-495-6260

Field Survey Summary

Area A

The southern part of transect A is largely "fill" and is characterized by species typical of disturbance including such weedy plants as Russian thistle, telegraph weed, ragweed, tree tobacco, pigweed, and lots of grasses. Also present were daisy fleabane, prickly pear cactus, croton, wild mustard, horehound and filaree. Trees or shrubs present included eucalyptus, two black walnuts, both Spanish and Brazilian pepper, willow and mule fat.

At the central portion of area A, point 2 on the map, just east of the road is a narrow area of fill and then about a 100 foot wide strip covered with sandy alluvial fan sediment, probably typical of what once probably covered this entire area. This alluvial strip parallels the road in a north-south direction. West of the road, where the transmission line is proposed is also "fill" and has been recently plowed. No significant plants occurred west of the road or on the transect up to this point.

In the alluvial sediment, east of the road, Eriastrum densifolium ssp. sanctorum was observed. About 200 plants were estimated to occur along the strip from pt. 2 on the map to a point slightly north of where the transmission line will cross the strip. There were areas in the alluvial strip with relatively few to no Eriastrum densifolium ssp. sanctorum. It seems that such an area could be used for a road without too much disturbance of the existing population of the Eriastrum. The majority of the species observed were south of the transect line.

The alluvial community is not pristine but has somehow survived the disturbance on either side. Along a fence placed south of the transect line were several species indicating disturbance including a Spanish pepper tree and weedy grasses. Eriastrum was present here also. Further south, the Eriastrum was scattered along with sand bur and scale broom.

East of the alluvial strip and over to the Edison Substation is also an area of "fill" and no Eriastrum was present.

I do not feel that an infrequently used road across the alluvial strip would unduly disturb the population of Eriastrum. Likewise, poles could be placed on either side of the alluvial strip. Any disruption of the drainage pattern or addition of fill, however, would be harmful. Otherwise, the impact on the population should be minimal.

Area J, K, M, F

The area near J is a sandy strip with wild buckwheat, senecio, Lessingia glandulifera and croton as the dominant species. Closer to K, the area is more disturbed with weedy grasses, mustard and Russian thistle dominating. Section K, M, F, lies close to the freeway and also was characterized by weedy or introduced species. Trees present included Eucalyptus, one Brazilian pepper and one Mexican palo verde. Other plants included sunflower, wild buckwheat, telegraph weed, ragweed, Jimson weed, some sapphire eriastrum, russian thistle, and croton.

Area J to D

Soil was sandy along the area from J to D. The vegetation was similar to that between J and K. Close to point D is a rather steep sandy hill, at the bottom of which is a road. At the top of the hill or on the slope were prickly pear, black sage, tree tobacco, and stinking gourd. Close to the road were wild grape, castor bean, giant reed, along with pigweed, wire grass, and puncture weed.

No Monardella pringlei was observed in the area surveyed. Placing a transmission line along this transect area should create no problems with destruction of sensitive plants or plant communities.

COLTON PROJECT

PLANT LIST

J to K

This area was rather sandy. Close to point K it was more disturbed with weedy annuals and grasses.

- Wild buckwheat - Eriogonum fasciculatum
- Telegraph weed - Heterotheca grandiflora
- Ragweed - Ambrosia psilostachya
- Lessingia - Lessingia glandulifera
- Croton - Croton californicum
- White forget me not - Cryptantha sp.
- Senecio - Senecio douglasii
- Deerweed - Lotus scoparius
- Wild mustard - Brassica sp.
- Russian thistle - Salsola iberica
- Red brome - Bromus rubens
- Ripgut grass - Bromus rigidus
- Wild oats - Avena fatua

K-M-F

This area was also disturbed. The soil continued to be quite sandy. The following plants were observed.

- Wild buckwheat - Eriogonum fasciculatum
- Telegraph weed - Heterotheca grandiflora
- Ragweed - Ambrosia psilostachya
- Lessingia - Lessingia glandulifera
- Croton - Croton californicum
- Deerweed - Lotus scoparius
- Mustard - Brassica sp.
- Russian thistle - Salsola iberica
- Sunflower - Helianthus gracilentus and H. annuus
- Sapphire eriastrum - Eriastrum sapphirinum ssp. dasyanthum
- Stephanomeria - Stephanomeria pauciflora
- White chicory - Malacothrix saxatilis
- Buckwheat - Eriogonum gracile
- Goldenbush - Haplopappus pinifolius
- Jimson weed - Datura meteloides

Dr. Barbara J. Collins

Trees

Blue gum - Eucalyptus globulus (quite a few trees)
Mexican palo verde - Parkinsonia aculeata (one tree)
Brazilian pepper - Schinus terebinthifolius (one tree)

J to D

Plants were pretty much the same as J to K. Near D, the following additional plants were observed:

Black sage - Salvia mellifera (on top of hill)
Stinking gourd - Cucurbita foetidissima (on top and down by road)
Prickly pear cactus - Opuntia sp. (on top)
Tree tobacco - Nicotiana glauca (on top)
Pencil cholla - Opuntia ramosissima (on slope)
Castor bean - Ricinis communis (near road)
Wild grape - Vitis girdiana (near road)
Puncture weed - Tribulus terrestris (near road)
Pigweed - Chenopodium album (along road)
Wire grass - Polygonum aviculare (along road)
Giant reed - Arundo donax (along road)

** No Monardella pringlei was observed in the area surveyed.

A - southern portion

This was a generally disturbed area along the river floodplain. Plants were mostly weedy species and grasses.

Wild buckwheat - Eriogonum fasciculatum
Telegraph weed - Heterotheca grandiflora
Ragweed - Ambrosia psilostachya var. californica
Lessingia - Lessingia glandulifera
Croton - Croton californicum
Wild mustard - Brassica sp.
Russian thistle - Salsola iberica
Sunflower - Helianthus annuus ssp. lenticularis
Prickly pear cactus - Opuntia sp.
Stinking gourd - Cucurbita foetidissima
Castor bean - Ricinis communis
Giant reed - Arundo donax
Daisy fleabane - Conyza canadensis
Nightshade - Solanum nodiflorum (moist area)
Horehound - Marrubium vulgare
Pigweed - Chenopodium album

Dr. Barbara J. Collins

Rough pigweed - Amaranthus retroflexus
Mexican tea - Chenopodium ambrosioides
Filaree - Erodium cicutarium

Trees and shrubs

California black walnut - Juglans californica (two trees near the railroad)
Willow - Salix laevigata (one specimen)
Poplar - Populus fremontii (one tree)
Mule fat - Baccharis glutinosa (several shrubs)
Tree tobacco - Nicotiana glauca (several specimens)
Spanish Pepper tree - Schinus molle (several)
Brazilian pepper - Schinus terebinthifolius (one tree)
Blue gum - Eucalyptus globulus (a few)

Mid area A and Northern portion -

This area is in the stream drainage of the alluvial fan that feeds the Santa Ana River. The area is sandy with scale broom, yerba santa, and sand bur as the dominant species. This is where the Santa Ana River woolly star is located. Also present were weedy species including grasses and filaree. One Spanish pepper tree was observed adjacent to the fence that traverses the alluvial strip, just south of the projected transmission line.

Scale broom - Lepidospartum squamatum
Yerba santa - Eriodictyon trichocalyx
Sand bur - Ambrosia acanthicarpa
Lessingia - Lessingia glandulifera
Filaree - Erodium cicutarium
Santa Ana River woolly star - Eriastrum densifolium ssp. sanctorum

The Santa Ana River woolly star plants (Eriastrum densifolium ssp. sanctorum) were fairly abundant in the sandy alluvium on the east side of the road, as outlined on the map. The area on the west side of the road showed signs of disturbance (plowing and fill) and no Eriastrum was found there. Likewise, in the area close to the Edison Substation there was no Eriastrum.

The plants seemed quite healthy and stood about 18 to 26 inches high. Well over 100 plants were counted in the area illustrated on the map. There was a sizable colony along the fence, just south of the proposed placement of the transmission line.

I would suspect that it would be possible to place a line in the area suggested without too much disturbance. It might even be possible to find a path that avoids the Eriastrum completely, since there did seem to be patches devoid of the plant. Any disruption of the drainage system, however, would be destructive for the plants.

** No slender-horned spineflower (Dodecahema leptoceras) was observed, although this is not the best time of year to spot it. No skeletons were observed on the sand in the alluvial fan.

Dr. Barbara J. Collins, California Lutheran University, October 24, 1994

ATTACHMENT L

FIRE DEPARTMENT SERVE LETTER



Thomas T. Hendrix
Fire Chief

March 15, 2001

Alliance Power
13934 Eberle Road
Bakersfield, CA 93313

Subject: Fire Service Verification Letter

Attention: Matt Olson

Mr. Olsen:

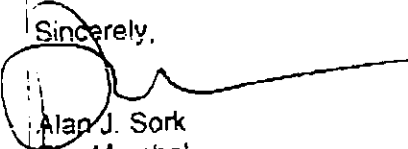
Please accept this letter as verification that the City of Colton Fire Department provides emergency medical and fire suppression services to the following addresses within the City:

- 559 South Pepper Avenue*
- 661 South Cooley Drive

* The City of Colton's boundary extends south on Pepper to Slover and west to Sycamore. The area east of Pepper and south of the freeway in part of a County pocket.

Please contact me should you require any additional information.

Sincerely,


Alan J. Sork
Fire Marshal

FIRE DEPARTMENT
303 East "E" St.
Colton, CA 92324
(909) 370-5100

CIVIC CENTER
659 N. La Cadea Drive
Colton, CA 92324
(909) 370-5099

ATTACHMENT M

TRAFFIC AND TRANSPORTATION DOCUMENTS

COMPUTER CAR COUNT

REFERENCE: CITY OF COLTON
 INTERSECTION OF PEPPER AVENUE AND 1-10 E/B RAMP
 OF COUNTER: LUIS SR.
 OTHER: FAIR

FILENAME: COLT43PM

DATE: 1 / 16 / 90

TIME BEGIN	--NORTH BOUND--			--SOUTH BOUND--			--EAST BOUND--			--WEST BOUND--			VEHICLE TOTAL
	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	
4:00	0	21	13	109	13	0	111	0	0	0	0	0	267
4:15	0	22	3	110	14	0	87	0	2	0	0	0	238
4:30	3	24	13	111	17	0	102	0	3	0	0	0	273
4:45	0	33	4	95	21	0	117	0	0	0	0	0	270
R TOTAL	3	100	33	425	65	0	417	0	5	0	0	0	1048
			(136)			(490)			(422)			(0)	
5:00	0	26	7	114	26	0	90	0	0	0	0	0	263
5:15	0	45	7	117	17	0	113	0	1	0	0	0	300
5:30	0	21	7	97	10	0	98	0	0	0	0	0	233
5:45	0	13	2	88	11	0	101	0	0	0	0	0	215
R TOTAL	0	105	23	416	64	0	402	0	1	0	0	0	1011
			(128)			(480)			(403)			(0)	
DAY TOTAL	3	205	56	841	129	0	819	0	6	0	0	0	2059

FOR THE PERIOD 04:00 - 06:00 THE PEAK HOUR IS 04:30 - 05:30

DIRECTION	PEAK HR FACTOR	---- VOLUMES ----			--- PERCENTS ---			
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT	
NORTH	0.78	3	128	31	(162)	2	79	19
SOUTH	0.93	437	81	0	(518)	84	16	0
EAST	0.91	422	0	4	(426)	99	0	1
WEST	0.00	0	0	0	(0)	0	0	0
					(1106)			

North 854

South 570

East 835

West 0

2004 Total Volume, Peak Hour 10019 = 20590

COMPUTER CAR COUNT

REFERENCE: CITY OF COLTON
 INTERSECTION OF PEPPER AVENUE AND I-10 W/B RAMPS
 # OF COUNTER: LUIS JR.
 OTHER: FAIR

FILENAME: COLT42PM

DATE: 1 / 16 / 90

PERIOD BEGIN	--NORTH BOUND--			--SOUTH BOUND--			--EAST BOUND--			--WEST BOUND--			VEHICLE TOTAL
	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	
04:00	1	87	0	0	90	42	0	0	0	10	0	78	308
04:15	0	114	0	0	93	40	0	0	0	3	0	94	344
04:30	0	140	0	0	134	47	0	0	0	3	0	69	393
04:45	1	126	0	0	108	43	0	0	0	1	0	72	351
HR TOTAL	2	467	0	0	425	172	0	0	0	17	0	313	1396
			(469)			(597)			(0)			(330)	
05:00	1	141	0	0	122	44	0	0	0	8	0	104	420
05:15	1	140	0	0	112	48	0	0	0	4	1	104	410
05:30	1	120	0	0	108	49	0	0	0	1	1	96	376
05:45	5	103	0	0	83	41	0	0	0	0	0	70	302
HR TOTAL	8	504	0	0	425	182	0	0	0	13	2	374	1508
			(512)			(607)			(0)			(389)	
DAY TOTAL	10	971	0	0	850	354	0	0	0	30	2	687	2904

FOR THE PERIOD 04:00 - 06:00 THE PEAK HOUR IS 04:30 - 05:30

DIRECTION	PEAK HR FACTOR	---- VOLUMES ----			--- PERCENTS ---		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
NORTH	0.97	3	547	0 (550)	1	99	0
SOUTH	0.91	0	476	182 (658)	0	72	28
EAST	0.00	0	0	0 (0)	0	0	0
WEST	0.82	16	1	349 (366)	4	0	95
				(1574)			

North 281

South 1804

East 0

West 710

X-2221 74

Volume 1804

Total = 2904

COMPUTER CAR COUNT

REFERENCE: CITY OF COLTON
 INTERSECTION OF PEPPER AVENUE AND I-10 W/B RAMPS
 E OF COUNTER: LUIS JR.
 OTHER: FAIR

FILENAME: COLT42AM

DATE: 1 / 16 / 90

P. BEGIN	--NORTH BOUND--			--SOUTH BOUND--			--EAST BOUND--			--WEST BOUND--			VEHICLE TOTAL
	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	
07:00	0	46	0	0	81	103	0	0	0	8	0	52	290
07:15	4	57	0	0	118	143	0	0	0	5	0	74	401
07:30	1	67	0	0	39	134	0	0	0	3	2	81	327
07:45	3	56	0	0	220	20	0	0	0	7	0	85	391
HR TOTAL	8	226	0	0	458	400	0	0	0	23	2	292	1409
			(234)			(858)			(0)			(317)	
08:00	4	53	0	0	123	85	0	0	0	4	0	73	342
08:15	0	50	0	0	112	80	0	0	0	1	0	55	298
08:30	3	49	0	0	81	64	0	0	0	4	1	37	239
08:45	0	45	0	0	90	60	0	0	0	4	0	66	265
HR TOTAL	7	197	0	0	406	289	0	0	0	13	1	231	1144
			(204)			(695)			(0)			(245)	
DAY TOTAL	15	423	0	0	864	689	0	0	0	36	3	523	2553

FOR THE PERIOD 07:00 - 09:00 THE PEAK HOUR IS 07:15 - 08:15

DIRECTION	PEAK HR FACTOR	---- VOLUMES ----			--- PERCENTS ---		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
NORTH	0.90	12	233	0	(245)	5	95
SOUTH	0.84	0	500	382	(882)	0	57
EAST	0.00	0	0	0	(0)	0	0
WEST	0.91	19	2	313	(334)	6	1
					(1461)		94

North 423

South 1573

East 0

West 562

2000 Total Volume: 692 Peak Hour Volume = 1461

COMPUTER CAR COUNT

REFERENCE: CITY OF COLTON
 INTERSECTION OF PEPPER AVENUE AND 1-10 E/B RAMPS
 # OF COUNTER: LUIS SR.
 #HER: FAIR

FILENAME: COLT43AM

DATE: 1 / 16 / 90

PERIOD BEGIN	--NORTH BOUND--			--SOUTH BOUND--			--EAST BOUND--			--WEST BOUND--			VEHICLE TOTAL
	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	LT	THRU	RT	
07:00	0	12	1	60	26	0	37	0	1	0	0	0	137
07:15	0	11	4	91	23	0	44	0	4	0	0	0	177
07:30	0	18	4	107	35	0	53	1	2	0	0	0	220
07:45	0	16	4	219	35	0	42	0	1	0	0	0	317
HR TOTAL	0	57	13	477	119	0	176	1	8	0	0	0	851
			(70)			(596)			(185)			(0)	
08:00	0	14	4	109	28	0	45	1	5	0	0	0	206
08:15	0	18	5	98	20	0	31	0	6	0	0	0	178
08:30	0	9	2	77	18	0	41	1	4	0	0	0	152
08:45	0	10	3	81	16	0	36	0	1	0	0	0	147
HR TOTAL	0	51	14	365	82	0	153	2	16	0	0	0	683
			(65)			(447)			(171)			(0)	
DAY TOTAL	0	108	27	842	201	0	329	3	24	0	0	0	1534

FOR THE PERIOD 07:00 - 09:00 THE PEAK HOUR IS 07:30 - 08:30

DIRECTION	PEAK HR FACTOR	---- VOLUMES ----			--- PERCENTS ---		
		LEFT	THRU	RIGHT	LEFT	THRU	RIGHT
NORTH	0.90	0	66	17 (83)	0	80	20
SOUTH	0.64	533	118	0 (651)	82	18	0
EAST	0.83	171	2	14 (187)	91	1	7
WEST	0.00	0	0	0 (0)	0	0	0
				(921)			

NORTH 135

SOUTH 1043

EAST 356

WEST 0

$\text{V.T.C.} = 934$ Volume Total Count Volume = 15740
 $\text{V.T.C.} = 934$ Volume Total Count Volume = 15740